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Number 83

June 1991

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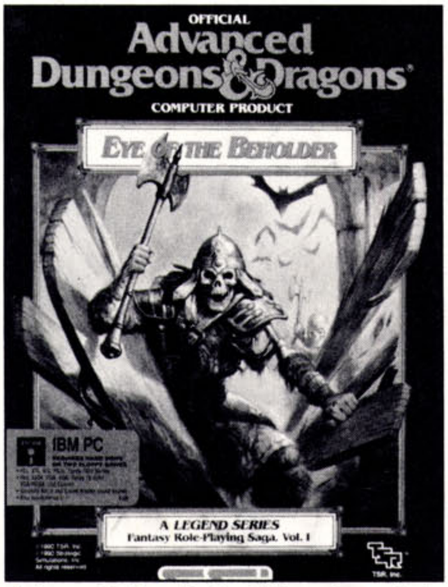
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COMPUTER GAMING WORLD

Covering the World of Computer Games for Ten Years

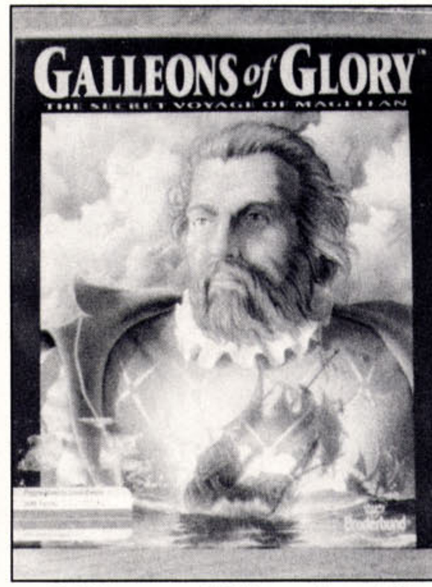
June 1991 **Number 83**



Eye of the Beholder / pg 14



TimeQuest / pg 12



Galleons of Glory / pg 80

Features

Departments

California Dreams
Los Gatos, CA

STREET ROD 2: Hanging out at the local burger joint, "relish" once again those long-lost hot summer nights spent cruising for chicks, checking out bitchin' rods and drag racing for pink slips. Browse the daily newspaper for cars and parts for sale. Start off with a junker and turn it into one bad street rod using grease-monkey skills. Then, cruise down to the Burger Bungalow and check out the action. Challenge other drivers to a drag race, either in the Los Angeles Aqueduct or on Mulholland Drive, for more bread or pink slips. Beat the King of the Road, scam his Betty and be the new Leader of the Pack! Includes an expanded "construction set" and improved graphics over its "little brother." IBM ($39.95). Circle Reader Service #1.

Data East
San Jose, CA

THE DREAM TEAM 3-ON-3 CHALLENGE: One player's dream is another's nightmare. Just *try* defeating Patrick Ewing, Dominique Wilkins and Joe Dumars! With a straightforward basketball/arcade interface, players can create their own "dream team," including designing plays (and calling them) for 1-on-1, 2-on-2 and 3-on-3 team play. Fouls, 3-point shots and a 24-second clock keep the action moving through individual games or tournaments. For one or two players, on the same team or as opponents. IBM ($49.95). Circle Reader Service #2.

ROBOCOP 2: A new drug, nuke, is all the rage in Old Detroit and is being pushed by druglord Cain. Where's the anti-nuke crowd when you need 'em? No matter. RoboCop is on the way through plenty of arcade shooting-gallery sequences and occasional puzzles over its three levels. All of the snazzy sound and graphics you'd expect from an Amiga ($44.95). Circle Service #3.

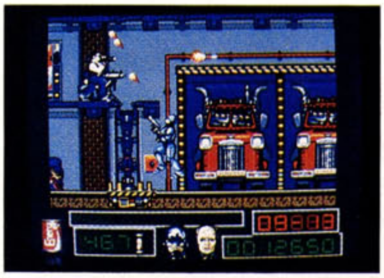
Advertiser List



Street Rod 2



The Dream Team 3-on-3 Challenge



RoboCop 2



Banzai: Death Sortie of Yamato



Double Dribble



RoboSport

General Quarters Software
Rancho Palos Verdes, CA

BANZAI: Fans of General Quarters software products have reason to celebrate. *Banzai: The Death Sortie of the Yamato* adds exciting air/sea operations, shell selection, damage control, counter-flooding and other new features to highlight this, the latest in their popular series of strategic/tactical WWII naval simulations. Players can also switch sides during the game and set computer strategy. A "modem play" file transfer option has also been added. While the sound and graphics quality are below the industry standard, the gameplay value is there. IBM, Apple II ($29.95). Circle Reader Service #4.

Konami
Buffalo Grove, IL

DOUBLE DRIBBLE: For those seeking cartridge-based game quality for their IBM computer, *Double Dribble* is worth a drive downcourt. Standard arcade basketball fare with some nice touches for team selection, this joystick jiggler is bargain priced for PC owners. IBM (19.95), C-64 ($14.95). Circle Reader Service #5.

Maxis
Orinda, CA

ROBOSPORT: In the best traditions of *Net Trek* and *Mad Maze*, this network game is something for the irreverent strategist. For one to four players (two via modem, and more via Appletalk network), commanding the droids o' death is as easy as can be. Advanced scenarios add Kamikaze maneuvers, time bombs and the dreaded Stealth Robot. Frenzied action with a *Running Man* sort of feel to it, this is definitely the high-tech version of "kick the can." Mac ($59.95). Circle Reader Service #6.

MicroLeague Sports
Newark, DE

MICROLEAGUE BASEBALL — THE MANAGER'S CHALLENGE: While supporting only EGA-level graphics, this

(Continued on page 91)



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Circle Reader Service #41

TITLE:	B.A.T.
SYSTEM:	Amiga, Atari ST, C-64/128 and IBM
REVIEWED:	Amiga and C-64/128
PRICE:	$39.95
# OF PLAYERS:	1
PUBLISHER:	UBI Soft
DISTRIBUTION:	Electronic Arts San Mateo, CA

What's a melodramatic science fiction role-playing game without a really despicable villain? Nothing, of course, but fortunately, that's not the case this time. In **UBI Soft**'s *B.A.T.* (*Bureau of Astral Troubleshooters*), Vrangor is a typical mad genius (or UBG, "Ultimate Bad Guy") set on galactic domination. After escaping from prison with his (all too typical) henchman, Merigo, Vrangor contacted the Confederation of the Galaxies with the vile threat of destroying the City of Terrapolis on Selenia if it wasn't deeded over to him within ten days.

Vrangor's method of destruction? Secretly hidden Nuctrobiogeic bombs planted somewhere in the city. The Bureau of Astral Troubleshooters ("B.A.T.") has been secretly asked to send an agent to track Vrangor and put a stop to his diabolical plan.

Troubleshooting on Selenia

UBI Soft's B.A.T.

By Martin Bowers and David M. Wilson





"This Is the City..."

B.A.T. contains a carefully constructed model of a futuristic city on the fictional world of Selenia. Terrapolis hosts a variety of alien and robotic characters and caters both to refined tastes and to coarser desires within the city limits (the dance halls, arcades and, of course, the exclusive Xifo Club). The local adult movie theater is also available, utilizing the latest techniques in appealing to all five senses. B.A.T. agents must carefully explore every inch of the city, from the highest penthouse to the lowest gutter in order to stop Vrangor.

Of Mice and Men(us)

B.A.T. utilizes a graphic interface, meaning the player selects options from the screen using a joystick/mouse cursor and various command menus. This forces the player to drag the cursor across *every* inch of each panel (a process which becomes very tedious). The Amiga graphic art was outstanding, but the C64 graphics were fuzzy, grainy and (generally) less than exciting. Both versions boasted a well-programmed soundtrack.

Follow Your Nose

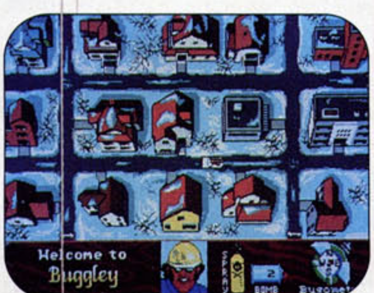
In game play, it is extremely easy to get lost, since the panels do not seem to fit together in a coherent fashion. Compass-style directions have no real bearing in this game, either. The arrow icons which indicate the direction a player may select relate ONLY to the picture the player is involved in at the time. Upon entering a new panel it is unclear whether an arrow option will return the character to his previous position or lead him to a new direction. The player will discover that he must memorize (or map) the relationship of the panels one to another in order to find his way around Terrapolis. In the initial stages, players will find themselves doing an undue amount of accidental backtracking, much to their annoyance.

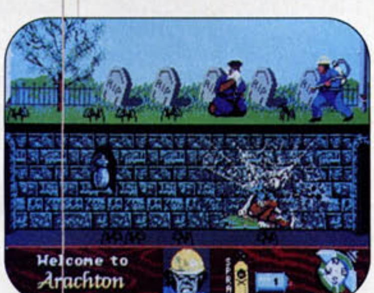
Talking to Strangers

Talking to non-player characters is simple. The player only has three questions he can ask (the same three questions for almost

(Continued on page 10)

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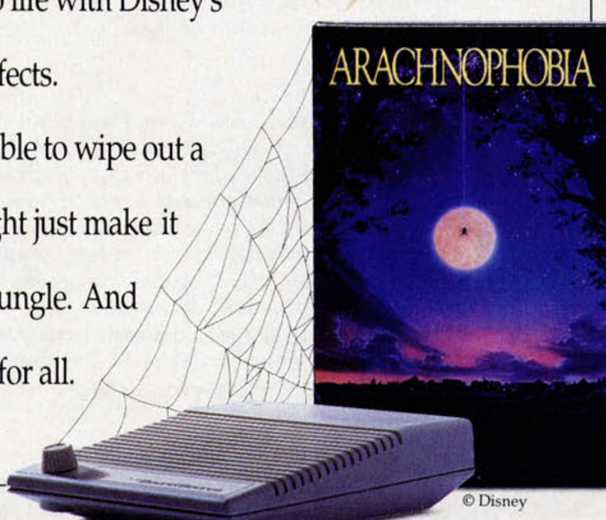
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Troubleshooting on Selenia

(Continued from page 8)

every person encountered). Players can basically find out about either Vrangor, Merigo or the city. Players can buy or sell items from these characters as well as offer gifts or bribes. Bribing these characters was not helpful at all in the Commodore version, by the way (every one, without exception, was insulted). The Amiga version's non-player characters, however, seemed open to the idea of either money or objects whenever they were offered.

Non-player characters will sometimes make illogical appearances. For example, in the secret place where Vrangor's bombs were planted, police appear. Even after killing Vrangor in his hideout, there were nonsensical appearances of police and others who logically would not have been there.

My Buddy B.O.B.

Players will be grateful for the assistance of B.O.B., their built-in Bidirectional Organic Bioputer. B.O.B. is situated on the agent's arm for quick access. Players would do well to take a quick course in computer programming in order to get B.O.B. to operate at optimal levels. Agents will have to use B.O.B. to perform translation from the exotic languages of robots and aliens into standard galactic speech. B.O.B. can also accelerate or decelerate pulse rates, remind the agent that he is hungry, thirsty or injured and advise if the agent is being followed. While programming B.O.B. is time-consuming until one gets the hang of it, it is well worth the effort.

The B.A.T. Quickstep

There is a game within the game. In the arcade, there is a game called Bizzy. The object of Bizzy is to memorize a progression of shapes. The player must learn to play Bizzy in order to save Selenia. Another place of entertainment the player will need to frequent is the dance hall. The Amiga mouse control made dancing a snap! The Commodore joystick dance, however, like the Lambada, was truly physically demanding. Players must jerk the joystick back and forth unduly vigorously. The writers tried several joysticks, but found little difference in performance. Sadly enough, this is another segment of the game which the player *must* accomplish to meet his goals (i.e., Secret Agent School should offer required courses in modern dance).

"Arcade-ic" Combat

The game's combat system was unsatisfying. Players seeking a nice evening of hack-and-slash gaming will not find it in *B.A.T.* The designers meant the game to be more of a puzzle-solver than a battle-oriented game. Combat consists of choosing a weapon, activating a shield (if available), placing the sights of a weapon on the enemy and pushing the button as rapidly as possible until the enemy flees or dies. Most role-playing games allow players to take all the time they want to decide upon what action to take. *B.A.T.*'s combat is more like an old arcade gunfighter game where speed is the most important element and strategy nonexistent. Post-battle booty gathering also seemed to be a glaring omission.

In order to catch up with Vrangor, B.A.T. agents will have to pilot a "drag." The drag is a specially designed aerial transport for Selenia. Piloting the drag in the Amiga version is fairly complex. The controls are sensitive and the player can find himself



piloting around in circles. The Commodore version is uncomplicated because all the player has to do is follow the arrows and use his lasers to blast the debris which is directly in his path.

Another machine the agent will encounter is the Mobytrack. The agent will drive the Mobytrack around an underground portion of the city. The underground is a confusing maze, so players may benefit from mapping the underground, especially in the Amiga version. Commodore players will find the underground simple if they remain persistent.

B.A.T. takes a radical departure from many traditional role-playing games. The key non-player characters are fleshed out and more realistic and the innovative use of the on-board computer (B.O.B.) adds more player interest to the game. These positive qualities are balanced, however, against puzzles that come together slowly, a poorly designed combat system, a frustrating interface and arcade elements which tend to detract from rather than add to the overall game experience. Unless one is willing to attempt the "completely different" system, traditional role-players will want to avoid *B.A.T.* Those who are willing to overlook some of the rougher edges of the game system may find plenty of chrome and flash to keep them satisfied. **cgw**

Touring in Terrapolis (Game Hints)

Warning: The following paragraphs have specific game hints. Readers who are troubled by seeing too many clues may wish to avoid this section.

Bizzy is easily played if each shape is assigned a number. The player simply writes down the number of each shape as it is displayed and then the sequence is easily keyed in.

After winning at Bizzy in the Commodore version, try searching the arcade. Every item needed for the game will be there.

To contact Crisa, Lydia offers assistance when the player is low on funds. She has Crisa's phone number. You've got to go back to the starport, however, to find a phone.

The technicians in the airlock have some critical access codes. The "R" stands for right and the "L" stands for left.

Don't ask the hotel clerk for information more than once. The game locked up on us whenever we tried this.

Make sure B.O.B. is programmed to translate both robot and alien. A lot of time will be wasted trying to switch B.O.B.'s translator mode back and forth and he will do it automatically if he is told.

Keep a close eye on energy, hydration and calorie levels. Have food, energizers and drinks or hydrator pills on hand.

Don't start fights unnecessarily. Most combat situations are not consequential to the game.

Don't forget to search Merigo after he's dead. He is the only character who has anything after he is killed. He has something vital to solving the game.



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Till the End of Time

Sneak Preview: Legend's Timequest

by Johnny L. Wilson

From H. G. Wells' *The Time Machine* through Simon Hawke's modern pulp series about *Timewars* (*The Ivanhoe Gambit* and *The Lilliput Legion* among others), the prospect of time travel has been a staple of the science fiction genre. Whether the villains who try to change time are aliens (or our analogues) from different universes trying to destroy our time continuum or sociopaths of our society's own making, the possibilities are endless.

Recent decades have brought films on the theme like *Time After Time*, that Victorian romp through time as H. G. Wells chases Jack the Ripper, and three permutations of *Back to the Future*. Even television shows (*Quantum Leap*), board games (*Time Tripper* by **SPI**) and pen and paper role-playing games (*Time Master: Adventures in the 4th Dimension* – **Pacesetter**) borrow the theme.

Naturally, then, one expects to see the time travel theme in computer games. In the early days of computer game software, there were several games that employed this concept: *Time Traveler* (**Krell Software**), *Timeship* (**Five Star Software**) and *Time Zone* (**On-Line Software**, now **Sierra**). Now, Bob Bates is, pardon the expression, turning back the clock to bring the concept back to life.





Historical Friction

Perhaps it is because time is the most elusive of resources and can never truly be saved, only spent (wisely or unwisely) that readers, viewers and gamers wish they could travel back in time in order to right wrongs; meet those rare visionaries who offered *timeless* wisdom; see the formative events of civilization from a first-person perspective and entertain alternate "historical" possibilities. *Timequest* succeeds in all but the latter task.

Bates' view of time is not as elastic as Robert A. Heinlein's view in *A Door Into Summer* or Robert Silverberg's hilarious *Up the Line* where minor changes could occur without completely disrupting the time stream and major changes would simply create a new time stream. The conceit underlying Bates' story is that, should the player fail in his/her mission, the time continuum would end and the player's person and society be annihilated. Hence, once cannot explore the "What if?"s of history in *Timequest*, simply solve the puzzles of what is given.

One might also quibble on some matters of historical detail. It seems highly unlikely to this Ph.D. in Old Testament Studies that King Tutankhamen's sister was the pharaoh's daughter who rescued Moses from the Nile. Most of the archaeological evidence surrounding the Exodus and entrance into the Promised Land of Israel would indicate that, at the earliest, Seti I would have been the pharaoh of the Exodus and, at the latest, Ramses II (which would agree with references to Per-Atum and Pi-Ramesse (Pithom and Ramses in *Exodus*). Also, biblical scholars would note that Moses was placed in an "ark" made from bulrushes rather than a popularized "cradle," as presented in the game. Nevertheless, the period details related to Tut in one vignette and Cleopatra in two others are so rich and the puzzles so distinctive that one needn't worry about such small details.

Indeed, one of the finest features of the game is the fact that one can get thumbnail sketches of all the periods represented in the game. This writer loved the interludes at the "Academy" in which the old man explains the philosophy of the day in simple and elegant terms, whether it is the philosophy and science of Plato and Aristotle or the dogma of Augustine. The philosophy is presented in a non-intrusive and non-judgmental way that adds considerable depth to the game.

Tempus Fugit When Playing *Timequest*

As for the mechanics of the game, *Timequest* uses the same engine as *Spellcasting 101: Sorcerers Get All The Girls*. The game system still uses a screen divided into five windows and allows one to approach the parser problem in several different ways. One can examine a room by placing the cursor upon objects displayed in the picture window and clicking or one can examine a room by typing "examine east bedroom." Further, one can select the direction for



traveling from the compass rose window. The handy feature of the compass rose is that it highlights the directions in which there are active locations for the character to explore. This speeds up movement considerably.

Also, the game uses a reverse parser that provides two lists in two separate vertical windows (located on the left hand side of the screen). One list is the verb list and the other is the noun list. It is possible to select the verb from the list on the left and a noun for a direct or indirect object from the list on the right. Should a preposition be required to manipulate an indirect object or direct the parser to the object of the preposition, a preposition list pops up on the left where the verb list generally resides. This helps one know that a preposition is to be desired. These lists can be manipulated by point and click or used as guidelines for typing commands (so that one does not have to play "guess the verb"). This can be terrific help, since any object which can be manipulated will appear on the noun list (once the player's character has seen it).

In addition to the same kind of "ease-of-use" that *Spellcasting 101: Sorcerers Get All The Girls* offered the player, *Timequest* offers a solid portion of humor. To be sure, it is neither the ribald nor prolific amount of humor to be discovered in Steve Meretzky's games, but the game tends to have the appropriate amount of comic relief to keep the player coming back for more. One should never hesitate to save the game and try something or say something off the wall in this game. The responses are *not* the traditional insults which computer games have historically provided. Sometimes, the text for weird actions is better than that for the mainstream plot line.

Timequest is neither as sexist nor as naughty as *Spellcasting 101*. However, the plotline *does* require the protagonist to be distinctly male in order to solve certain puzzles (because of both the game situation and the historical setting), but does not promote the lechery of which *Spellcasting 101* has been accused.

Panem Et Circenses

The title of this section would be translated "bread and circuses." It was considered to be the motto of some of the more corrupt Roman leaders, since it indicated their feeling that the masses would be appeased by having bread to eat and spectacles to see. It is referred to here because it is indicative of the nature of the puzzles to be solved in *Timequest*. When one's player character reaches the Circus Maximus in 44 B.C., it is not enough to solve the chariot race puzzle alone, but one must also get an object from the crowd (to be used in another time period) and solve the Caesar assassination puzzle. The puzzles are typical of the genre, but the twist in *Timequest* is that each puzzle teaches something about the historical period where it is set. For example, one puzzle is so "zen" that it requires that the player think without acting in order to solve it and another puzzle underlines the prejudice between Catholics and Protestants during certain periods. Other puzzles play off superstitions in order to successfully continue the quest.

In short, the puzzles are so varied in both difficulty and subject matter that they should appeal to the hardcore adventure gamer (especially fans of the classic **Infocom** games) and the curious adventure game dabbler as well. Indeed, the puzzles are so interesting that, in spite of the King Tut quibble, the game could well serve as a light, but very interesting, historical introduction to Western civilization.

That's the Way It Should Have Been

Timequest is a "bigger" game than *Spellcasting 101*. It proves that thought-provoking puzzle games do not have to be enslaved to one type of parser or another and that adventure games are "not quite dead yet." Indeed, Bob Bates may have found a way to turn back the clock and deliver challenging games without presenting stories via an archaic technology. *Timequest* has plenty to offer the adventure gamer who does not need animation to stir his/her imagination. It is a game for mature players who want more sass than splash, more wit than gee whiz. Others need not apply. **CGW**

Booty is in the *Eye of the Beholder*

by Dennis Owens





TITLE:	Eye of the Beholder
SYSTEM:	IBM
PRICE:	$49.95
DESIGNERS:	Phil Gorrow, Eydie Laramore, Paul S. Mudra, Joe Bostic
DEVELOPER:	George MacDonald
PUBLISHER:	Strategic Simulations, Inc. Sunnyvale, CA

Given the choice of a god-like perspective where one almost dispassionately "offs" the inevitable foes as though throwing thunderbolts from a far-off cloud, or a first-person encounter where fiendish creatures leap out of the darkness and loom threateningly at eye level, which option would be expected to heighten the tension and exhilaration of combat? The latter, of course. This personalized combat perspective undoubtedly earned much of the praise for **FTL**'s *CGW Hall of Fame* member, *Dungeon Master*. In a very real sense, *Eye of the Beholder* (**SSI**'s first entry in the "Legend Series," a new line of *AD&D* computer role-playing games) is *Dungeon Master* meets veteran storyteller George MacDonald.

Eye of the Beholder is a stunning, brilliantly graphic and agonizingly tricky foray into the world of 3-D perspective CRPGs. Now, parties must deal face-to-face with the messy consequences of the zombies, drow, displacer beasts and assorted other nasties which dwell in the sewers and catacombs beneath Waterdeep. Notwithstanding the plumbing problems such creatures must create, the hero's-eye view of the action insures that even lesser creatures will seem formidable and no longer impotent digressions from the main task.

To Your Health

Helpful, in this regard, is that the game does not allow the party to ever be able to determine how many hit points an opponent has. Indeed, the question of hit points is rendered almost irrelevant in the game. (Although the party's statistics can be set to be displayed by number, the default display — and that recommended by this reviewer — is by bar graph.) Health, then, becomes more of a question of an overall sense of well-being. Battle, instead of diminishing simply to a race between numbers, becomes, as it should be, a desperate fight to the death.

Watch Out For Those Smoking Black Holes

MacDonald rendered the world of Waterdeep into a rich texture of satisfying exploration. Far into the game, surprises continue to abound and inventiveness and discovery pay off. Although seductively easy to begin, the game's graphics, puzzles, NPCs and new events all serve to make the game constantly exciting and invigorating. Attention must be paid to detail, because the potion the party does not discover in the early hours of play may very well turn out to be the one which might have saved the day as one nears the endgame. The sense that a real world called Waterdeep exists beyond the confines of the game's limits is strong.

Getting Your Rocks

The game's fiction is fairly standard. Evil is plaguing Waterdeep (read Xanathar the Beholder) and must be found and deterred. In practical terms, *Eye of the Beholder* features a quest for seven stone objects (none necessary to complete the game) which set

Circle Reader Service #42 »

A Little Role-Playing Is A Dangerous Thing…
When It's Done Right

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up the incredible visual delights, tricky puzzles and realistic interactions that, finally and at long last, begin to create the sense of a real world in computer *AD&D*.

Show Some Character, Hold This!

Character generation is a snap. Races, classes (all of which are familiar to *AD&D* veterans) and mixed classes are available, and ability scores and initial hit points can be modified after creation. Character portraits can also be chosen. As the game progresses, advances in level occur automatically, but it is up to the mage to locate any scrolls which might be able to be scribed into a spellbook.

Items are worn and placed in hands to be used via the characters' equipment screens — accessed by clicking on the portraits or by pressing the corresponding function key. Although the game supports both keyboard and mouse interface, this reviewer found gameplay most practical by using a combination of the two (point-and-click for character interactions and arrow keys for movement).

In combat, items are used by clicking on the pictures of them in the characters' hands with the right mouse button. Combat is not phased but, as mentioned earlier, occurs in real time (or, at least, something similar to real time). Recovery time after wielding a weapon/item depends on the item used and the character's dexterity.

Slamming Sideways Into Walls is *Not* a Successful Defensive Technique

One of only a few complaints is that it ends *immediately* after the final battle with Xanathar the Beholder without giving the party the chance to go back and re-explore other parts of the dungeon.

One is also disappointed in the occasional awkward nature of the combat and movement interfaces. This reviewer understands and accepts that the characters should be prepared before battle commences and that, should a character decide to rummage around in his/her backpack during combat, he/she should expect a few wallops on the back from the battleaxe of a mantis warrior. However, what this reviewer does not understand is why, once a cleric's holy symbol of mage's spellbook is clicked on, the character should continue to be susceptible to damage while the player has to move the mouse pointer from the book/symbol

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to the spell list, which appears on the screen a substantial distance away from that book/symbol. Just a bit of "arcade reflex frustration" here.

Also, movement via the mouse occurs *only* if the player clicks on a relatively small and close-set collection of buttons beneath the view window. Often, during the speed and frenzy of battle, one finds his/her party getting pummelled by nasties as it slams, pell-mell, into walls while frantically sliding the pointer from one end of the screen to the other. Such a frustrating problem could easily have been avoided if the game's programmers had seen fit to allow mouse movement via the view window (a la *Dungeon Master* and numerous other games).

Further, this reviewer would have liked, in a game which so obviously has the capacity to create such a strong and believable fictional world, even more interaction with NPCs and, in the (newly created) tradition of *Death Knights of Krynn*, more side quests and things to do while on the main adventure.

Finally, in such a beautiful and graphically innovative world, one cannot help but wonder where it is written that all tunnels *must* be square, or that tunnels hewn out of rock do not have jagged edges? Especially in sewers, a few round pipes might have been expected.

However, such complaints are niggling, and, perhaps, brought to mind simply because of the success with which *Eye of the Beholder* captures the imagination.

Although the game supports EGA, CGA and Tandy graphics, VGA is highly recommended. AdLib and Sound Blaster boards are also supported to great detail. Zombies' hands swoop through the air at the party, swords clash, spells chime and blast, spider's fangs gnash and click.

Conclusion

At long last, IBM owners need no longer complain. They now have a game like *Dungeon Master* — a magnificent game that promises to be only the first in a long (we hope *very* long) line of releases. **CGW**

Game Hints

Warning: major secrets are given away in the following section. Please read only when very frustrated.

1. By far, Xanathar is the most difficult creature to kill. Standing and fighting "eye-to-eye" (so to speak) with the beholder will most likely result in a party of disintegrated characters. Instead, try moving around the beholder, striking it from the sides and behind it. Also, forcing it back into its own spike trap is highly effective.

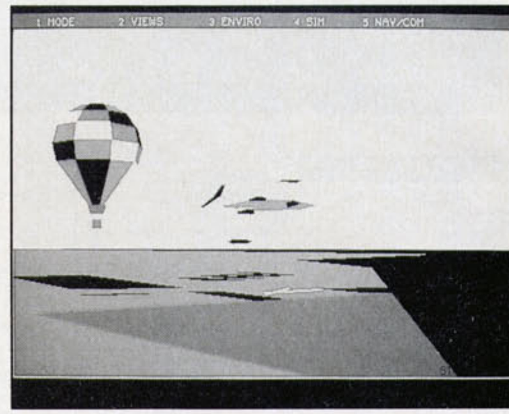
2. After the beholder, the Illithids are most dangerous. Protection from evil spells, prayers and constant barrages from frost wands and fireball wands seem to work well against them.

3. Rust monsters will not affect the armor and weapons held by characters behind the front rank. Magic missile spells will finish off these nasties.

4. Examine the portals carefully and consider the stones/wands/rings/etc. the party finds. Understand that any place in the game can be returned to (not strictly via saved games, either). Put those two sentences together and come to the obvious conclusion.

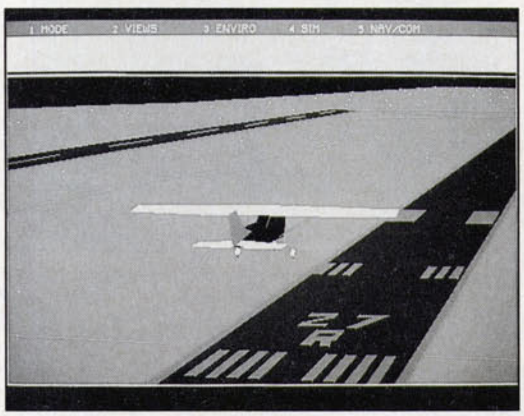


A Flight Toward Reality



Flight Simulator 4.0

by Tim Trimble



TITLE:	Microsoft Flight Simulator 4.0
SYSTEM:	IBM PC and compatibles
PRICE:	$59.95
DESIGNER:	Bruce Artwick
PUBLISHER:	Microsoft Redmond, WA

Flight Simulator version 4.0 from **Microsoft** is a significant step closer to the reality it simulates. Microsoft has demonstrated that they are serious about making *Flight Simulator* the next best thing to sitting in the pilot's seat.

The first noticeable changes to *Flight Simulator* are experienced by means of the smoothness and greater detail of the graphics, especially on computers equipped with a VGA monitor and a 80386 processor. From the addition of surrounding air traffic ("Where did that 767 come from?"), strobe approach lights on the runway, detailed ground scenery and an actual moving propeller, Microsoft has done a good job of enhancing the realism of the product. With the addition of the optional *Aircraft Scenery and Design Kit*, the armchair pilot can create environments with intricate detail.

Aeronautical Engineering

For those who like to experiment, the Cessna 172, the Gates Learjet and a new Schweizer 2-32 sailplane provide the basis for creating experimental aircraft by allowing changes to the flight characteristics of these aircraft. The dihedral, aspect ratio, winglets, stabilizers, weight, balance, propulsion and aerodynamics can all be changed. Once changed, the newly designed plane can be saved for later use. (Yes, it is possible to design a rock!) An experimental jet is also provided for tinkering with the physical laws of flight.

Sailing With the Clouds

The new Schweizer 2-32 sailplane adds a new dimension to *Flight Simulator* — unpowered flight. "Above" the more realistic and unpredictable weather systems, thermals have also been added to allow for the use of the sailplane. Thermal lift can be found by flying over ridges and dark-colored areas of ground. Although a tow plane is not provided, it is quite easy to start out as a Cessna 172 and then change into the sailplane at the proper altitude, or just start the simulation at any height desired. However, there are only a few areas in the *Flight Simulator* world that have thermals and the use of the sailplane should be restricted only to those areas (unless, of course, one wants to design a propeller for his sailplane).

Trackin' on With *Tracon*

Ever wonder what to do with the transponder controls in *Flight Simulator Three*? Now, while navigating around controlled airports, Air Traffic Control will contact the pilot, provide clearance for landing and assign transponder frequencies. ("Ah, Cessna 172, please squak ident 1250"). This feature works nicely with a product called *Tracon II* (an air traffic control simulator from **Wesson International**). When a computer running *Tracon II* is attached to the computer running *Flight Simulator*, then the "Air Traffic Controller" can issue course changes to the *Flight Simulator* pilot.

The flight characteristics of *Flight Simulator* have also been improved to reflect a more realistic aircraft "feel." This is particularly noticeable during steep banks and unusual flight attitudes. High speed stalls are also a good indication of this, since one wing tends to dip and places the aircraft in a spin.

Flying up a Storm

The weather controls for *Flight Simulator* have been greatly enhanced to provide more realism. Weather can be set



up to be random and dependent on the date and time of the computer system clock. So if the armchair pilot starts flying at 5:30 a.m. on a winter morning in Chicago, it is going to be very dark and windy with a good chance of rain.

The Approach Lighting Systems in *Flight Simulator* have been greatly improved, making approaches to the airport much more realistic. These improvements includes a Visual Approach Slope Indicator (VASI) that denotes if the pilot is flying too high or too low on approach to the runway. The Runway Alignment Indicator Lights (RAIL) show a flashing row of strobes, pulsating from front to back, indicating proper alignment to the runway. There is also the Runway End Identifier Lights (REIL) which help to show the beginning and end of the runway. Although these are visible and usable during daylight flight, the effect is better during night flights.

Flying in Tandem

Microsoft has also invested plenty of effort into connectability. The most impressive expression of this effort has to do with the addition of connective options with regard to other computers running *Flight Simulator* or *Tracon II*. This can be done via modem or by attaching a serial cable between two computers. Playing in conjunction with another person creates a true interactive environment where pilots can see each other, fly in formation and do airport pattern flight while interacting with Air Traffic Control. Subscribers to the CompuServe Information Service can also interact with other Flight Simulator pilots and fly together in special "fly-ins."

Overall, *Flight Simulator 4.0* is a great improvement over previous versions and shows that Microsoft is committed to creating a "true" flight simulator that is not only thoroughly enjoyable but also provides a great education to any prospective or existing pilot. All that is needed now is for the Federal Aviation Administration (FAA) to stand up, take notice and allow the use of *Flight Simulator* for actual flight simulation time to be recorded in pilot's logbooks. With the continued commitment from Microsoft for enhancement of this product and the sophistication of its add on products, could it be said that *Flight Simulator* might actually make flying safer? Time will tell. **CGW**

The Rumor Bag

by Dewey H. Louie



If you want to succeed in Hollywood, you have to network, network, network. So I was doing lunch with a director in the studio commissary over at Disney a couple of weeks ago. The director loves strategy games and wished that there were more games like *Empire*. I figured the best way to make points with him was to tell him about Mark Baldwin's new game, *The Perfect General*. It is a classic strategy game disguised as a tactical-level wargame with very simple rules. "It's to be published by **Quantum Computer Products**, a new company out of New Jersey." Over angel hair pasta and peach-flavored iced tea, I told him that **QCP** was also publishing a naval combat game called *The Lost Admiral* that handled combat reminiscent of *Empire*.

The director spotted a producer he had to talk to, jumped up, excused himself and dashed to the other side of the commissary. I was finishing my tea and happened to overhear this producer-type bragging to some would-be starlets about something called **The Sierra Network**.

Now, as a would-be screenwriter and part-time rumor columnist, I'm usually up on these kinds of things. Frankly, I didn't know anything about a new television network in the Sierras or anywhere else. I had to talk to this Johnny Hotshot. "Excuse me," I started to interrupt when I overheard him say something about *Leisure Suit Larry*. He glared at me as though I were offering to work for food. "Do you mean," I queried, "that there's going to be a *Leisure Suit Larry* television show?"

"No," he intoned with a velvet vocalization reminiscent of Orson Welles, "I do not mean television. I was simply talking about the multi-player *Leisure Suit Larry* program to be encountered on **Sierra**'s new games network. They already have bridge, hearts, chess, cribbage, backgammon and checkers up and running for their playtest, with *SierraLand* and *LarryLand* under development. *SierraLand* will have paint ball games, as well as multi-player *Red Baron* and *Stellar 7*. *LarryLand*, as I was trying to describe it before you so rudely interrupted me, will include more 'adult' entertainment, including flirtation as only *Leisure Suit Larry* fans would flirt."

Don't you just hate people who have all the answers? I tried to save face (or, at least, what you could see of my face underneath my rumor bag) by describing the *Space Quest* comic book that **Sierra** has authorized. It didn't work. He simply pulled a copy of the first *Indiana Jones and the Fate of Atlantis* comic book from **Dark Horse Comics** and one-upped me by telling me that it contained the plot for **Lucasfilm Games**' upcoming *Indiana Jones* graphic adventure. "Don't worry," he continued, "it doesn't give away any of the puzzles. Your readers can enjoy both the comic and the game."

I quickly decided that I needed fresh air more than I needed to finish the conversation. So, I strolled out of the commissary and sat out by the pool, looking up at the statues of the seven dwarves which adorned one Disney office building much like statues of the Pharaohs once dominated Egypt's "Valley of the Kings." One of the "severe dudes" in "corporate" was sitting by the reflecting pool, playing with a hand-held electronic video poker game. I told him that **Villa Crespo Software** had just purchased the rights to John Cumo's *Vegas Johnny's Dealer's Choice* with its 28 varieties of poker. So, I said, if you really want a poker challenge, you need to pick up the next edition of *Amarillo Slim's Dealer's Choice*.

He thanked me and asked me where I was headed. I told him I was walking toward the *Rocketeer* soundstage. He motioned toward the back lot and asked if I knew that **Walt Disney Software** was publishing a computer game where the action takes place after the events in the *Rocketeer* movie. I *told* him I did. After all, I did *now*.

I walked down the main street that had served as the town square in *Something Wicked This Way Comes* and past the front porch from a couple of old Fred MacMurray flicks. Realizing that the back lot was like a miniature city where almost anything could be made out of the facades, I remembered that the *Stunt Pilot* series from **Walt Disney Software** would take place behind the scenes of a film studio. Players will get to "perform" aerial acrobatics as though the game were strictly a flight simulator. Then, players will be able to edit and save "films" of their flights for future playback.

I arrived at the soundstage and observed the crew setting up for the ballroom fight scene. They had these wires set up so the Rocketeer could fly across the ballroom and through a screen that they were ready to set on fire. One of my regular sources was standing to one side. "Hear you were upstaged in the commissary," he chuckled. "Don't you have connections at Sierra anymore?"

The pounding, hammering and shouting that normally fill a working soundstage when shooting is not in progress seemed to be non-existent as the crew burst into laughter at my discomfiture. "Okay, okay," I protested, "I may have missed **The Sierra Network** scoop, but I do know some rumors. There are two other *Leisure Suit Larry* products in the works. One is a sequel to the adventures in the series and the other is called *The Laffer Utilities*. The utility program will handle office sports pools, create goofy faxes and generally provide help for all those time-wasting activities in the office. More efficient waste, get it, just like film production." The hammering and shouting resumed and I was grateful I had managed to sustain, at least, part of my vaunted reputation as a gossip columnist. **cgw**

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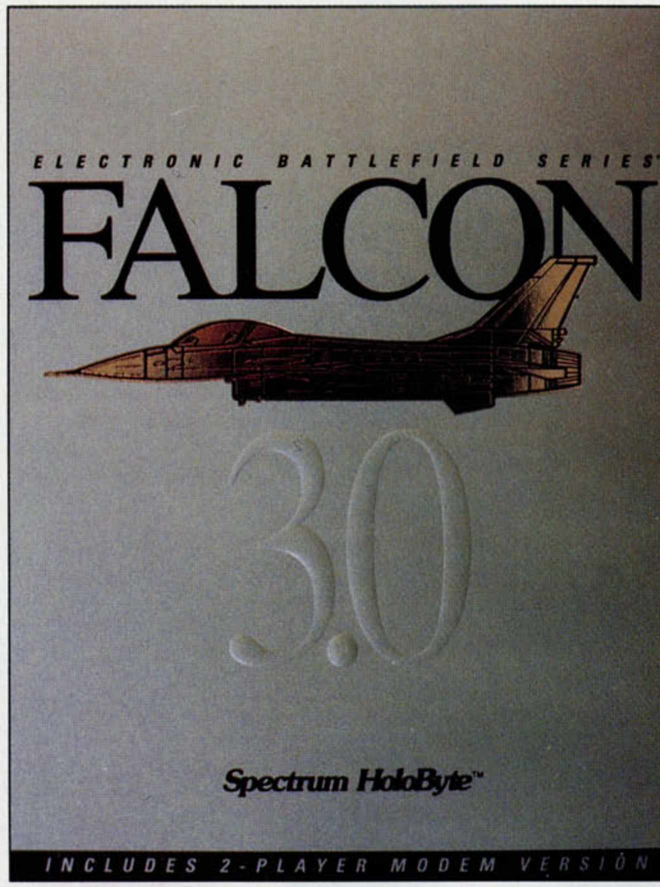
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A Playtester Unhoods *Falcon 3.0*

A Sneak Preview

by Mike Weksler





[Mike Weksler is a contributing author for **Osborne/McGraw-Hill***'s upcoming* Falcon 3.0 Air Combat *book with Pete Bonanni. A beta tester for* **Spectrum Holobyte***, Mike is also a SYSOP on CompuServe in the Modem Games Forum and the Modem-to-Modem Lobby, where he is known online as "Moondawg."]*

Where *Falcon AT* and *Falcon* were acclaimed in their own right, *Falcon 3.0* brings to the IBM computer jet jock a scaled-down version of the actual ASAT (Advanced Situational Awareness Trainer), the highly sophisticated simulation of the F-16A used by the U.S. military and also manufactured by **Sphere, Inc.**. **Spectrum HoloByte**'s parent company. This means that when one selects the High Fidelity Flight Model from the System Setup screen, one will be flying as close to an *actual* F-16A flight model as declassified information can provide.

"Your Mission, Should You Choose To Accept It..."

Missions are flown in three theaters: Panama, Israel and Kuwait, and include missions similar to those flown by real F-16 pilots in Operation: Desert Storm (one can even fly missions over Baghdad). *Falcon 3.0* will also be compatible with Spectrum Holobyte's EBS (Electronic Battlefield Series). This will allow simulators of different military equipment to be linked together for head-to-head play.

The options currently available include instant action, Red Flag (weapons school), Campaign, Communications, TACTS (Tactical Air Combat Training Simulator) and Configuration. Of these, only Configuration and Campaign were available for this preview. Upon selecting the Campaign portion of the main menu, the screen fades to the Difficulty Level menu screen where the choices include Skill Level (Beginner, Intermediate, Advanced and Custom), Enemy Logic Level (Drone, Trainee, Cadet, Veteran and Ace), Fuel Usage, Weapon Efficiency, Intelligence, Limited Arms, Limited Chaff/Flares, SAMs/AAA, Mid-Air Collisions, Ground Crashes and Redout/Blackout. The advanced *Falcon 3.0* pilot will see this menu screen as a magnificent palette from which to mix and match the configuration best suited to the player's needs and skills.

Unnatural Growling

From this menu screen, one can select the System Setup screen with the following options selection: Flight Model (Simplified, Moderate, Complex and High Fidelity), Flight Control (Keyboard, Joystick, Joystick with Throttle, Dual Joysticks and Mouse), Detail Level (Minimum, Medium, High and Maximum), Sound (PC Speaker, PC Digitized, Tandy, Ad Lib, PS/1, SoundBlaster and Roland), and Sound Settings (All On, All Off, Sound and Engine and Sound with Sidewinder Growl). The two items to take note of here are the High Fidelity flight model, which requires a math co-processor to run, and the Sound option with the Sidewinder growl. For those who do not know, in real fighter jets, the Sidewinder emits a growling noise as the heat-seeking head of the missile acquires a heat source. One may have heard fighter pilots referring to acquiring a target as achieving "tone." This "tone" is referring to the Sidewinder's growl.

Campaign Selections

Upon exiting the System Setup menu, the Campaign portion of the main menu is selected. The first thing one must do is to select the patch of a squadron and create 16 rookie pilots from scratch (complete with faces, if desired). Then one selects the theater of operations (Panama, Israel or Kuwait) and enters the briefing menu where one selects a

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IF YOU'VE EVER FLOWN a PC, you know how it can simulate every nuance of an airplane's performance envelope. And if you concentrate hard enough on the instruments, you'll soon learn what the limits are.

But when you're making a torpedo run at an enemy flattop, with flak blowing by your canopy and two Zeroes chewing up your tail, all that goes out the window. And you learn to fly by the seat of your pants.

That's the idea behind *Battlehawks 1942*,™ the new WWII naval air combat simulator from Lucasfilm Games. Besides the intellectual challenge of mastering six classic carrier planes, you get the white-hot rush of diving into some very hairy situations.



"My first burst of tracers skimmed the Val's tail. Just as I corrected my aim, he dove. I stuck like glue to his plane, taking it apart by bits and pieces. Suddenly, he pulled up and bailed through the shattered canopy. Moments later, the Val exploded..."

RELIVE HISTORY. OR REWRITE IT.

Battlehawks 1942 gives you an authentic pilot's eye view — from both sides — of four battles that turned the tide in the Pacific. As an American carrier pilot, you'll fly Wildcat fighters, Dauntless dive bombers and Avenger torpedo bombers. From the Japanese side, you'll fly Zeroes, Vals and Kates.

You'll tighten up your combat skills in a dozen training missions, then fly more than 30 real ones, from the Coral Sea to the Santa Cruz Islands.

"In early 1942, American planes were no match for my Zero. I was a hawk in a flock of geese — soaring, looping, pouncing, destroying. I was truly saddened for the brave men in those sluggish planes. All too soon, the planes got better..."

EVEN THE THEORY IS REAL.

The technical detail and historical depth of *Battlehawks 1942* are bound to satisfy the most hard-core simulation buffs. Everything has been exhaustively researched, right down to the optimum airspeed and attack angle for dropping torpedoes.



Bombing a moving ship half a mile below, diving at 250 mph and dodging flak, can be a little tricky.



Your Wildcat's heavier armor and guns win in a shootout, but watch out if a Zero gets on your tail.

Flight characteristics and instruments are authentic. So are weapons and enemy tactics. About the only feature that isn't authentic is something combat pilots never dreamed of. An instant replay camera.

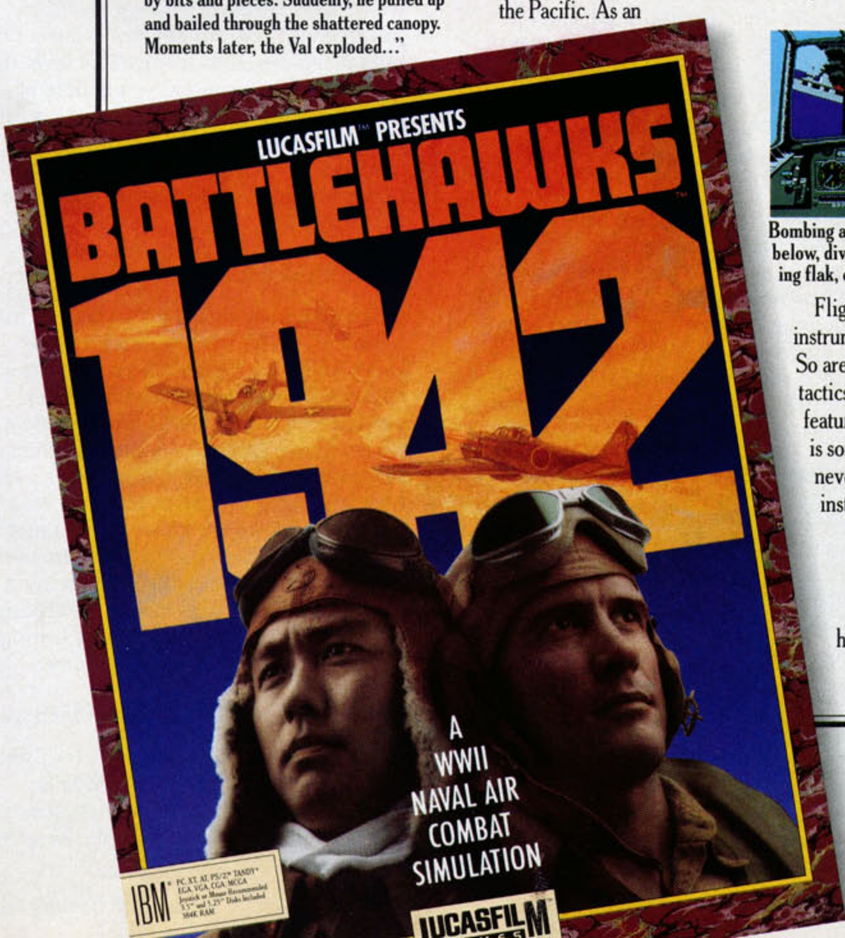
GROUND SCHOOL IT ISN'T.

We asked WWII pilots how to make *Battlehawks 1942* feel like the real thing. To a man, they said make it *intense*.

So instead of polygon-block graphics, we use high-resolution, digitally-rendered images. Ships and planes look almost photographic. Bombs and torpedoes explode in infernos of flames and smoke. The feeling, as one veteran pilot put it, is like flying into a beehive.

And that's where the science leaves off, and the fun starts.

LUCASFILM™ GAMES



mission. Targets and waypoints are assigned, but can be modified by the player. One will have the choice of editing Routes, Waypoints, number of F-16s, Add Waypoint, Delete Waypoint, Altitude, Speed and Action (Passive, Land, Bombing, S&D, CAS, CAP).

When Report is selected, a menu appears in which one can select such objects to view as friendly or enemy aircraft. When the Friendly Aircraft icon is selected, an image of a computer appears and types out the name of the aircraft on the left, displays a digitized picture of it on the right, and rotates a 3-D polygon-filled object of the aircraft in the foreground.

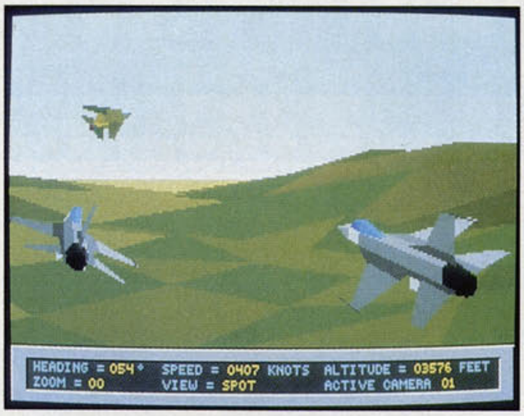
Who *Are* These Wingmen?

After the appropriate variations are programmed in, one may then assign pilots to the flight from the squadron of sixteen. Upon entering the Assign Pilots menu, one will see options for assigning and removing pilots from a given flight and an option to view the information on each pilot including Name, Call Sign, Pilot Abilities, Dogfighting Skills, Bombing Accuracy, Flying Ability and Fatigue. Each factor will affect the performance of a particular pilot in a given flight. Other statistics given for each pilot are the number of enemy aircraft that pilot has shot down, the total number of ground targets destroyed, and Medals/Awards.

When finished assigning pilots to the given flight, one may select the weapons option in the menu. A digitized head-on view of the F-16 appears and below it, a veritable smorgasbord of weapons to load onto it. The following weapons are selectable: AIM-9M and AIM-9P Sidewinders; AIM-120 AMRAAMs; Mk. 82, 83 and 84 iron bombs; GBU-15 smart bombs; AGM-65 Mavericks; CBU cluster bombs; LAU rocket pods; AGM-45A Shrikes; AGM-88A HARMs; GE pods; LANTIRN pods; 300-pound and 370-pound fuel tanks; Durendal anti-runway bombs; Paveway laser-guided bombs and ALQ ECM pods. Weapons will affect such factors as weight, maximum Gs and drag coefficient.

Scramble!

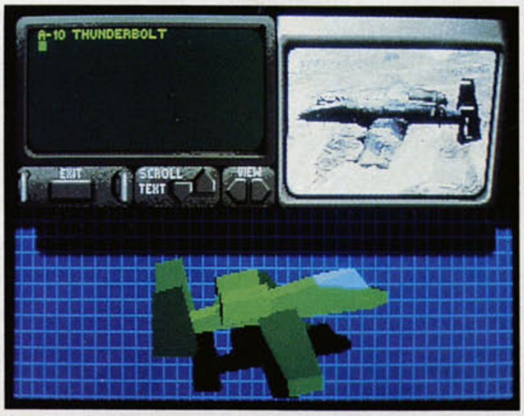
From the weapons menu, one may (finally) select Take Off. A digitized animation of an F-16 squadron briefing appears followed by another animation of an F-16 pilot lowering his canopy, taxiing, and taking off. The view is then switched to a satellite view which rapidly descends into the cockpit of one's F-16.



The first thing that is immediately noticeable about the cockpit, besides the 256-color VGA graphics, is the radar actively scanning in azimuth and elevation. The APG-66 radar has been quite accurately modeled. One can scan for radar contacts in four different ranges: 10, 20, 40 and 80 nm (nautical miles). Elevation can be adjusted in three settings as well as the azimuth. There is a Normal Air, Situational Awareness Mode, Aerial Combat Mode and a Single Target Track (STT) Boresight Mode. The information blocks on the radar screen are the same as *Falcon AT*, except that the *Falcon 3.0* pilot will have the ability to manually "corral" or lock up a target. Upon switching the radar CRT to the Map mode, the *Falcon 3.0* pilot will be able to see his F-16 indicated as a blip on a huge 300 x 300 mile area! No more flying off the map when going to zone 5 (full afterburners) as with *Falcon AT*.

HUDs Up

Other avionics include air-to-air and air-to-ground HUD modes. So far, in the air-to-air mode, once a TD (Target Designator) box appears on the HUD, the pilot can "uncage" the seeker diamond and watch it merge with the TD box. That, combined with the Sidewinder growling, is extremely realistic.



This playtester has also learned that *Falcon 3.0*'s air-to-air Gun HUD display will no longer depict the snapshoot line or "snake." It will instead use an air-to-air gun HUD similar to that which has been incorporated into *A-10 Avenger*, another forthcoming **Spectrum HoloByte** simulator.

In this test version, the Falcon can fire the AMRAAM (Advanced Medium-Range Air-to-Air Missile) which is capable of BVR (Beyond Visual Range) target acquisition. Previous versions of *Falcon* have been more visually oriented.

In *Falcon 3.0*, since one will have the ability to acquire a target BVR (up to 18 nm), one will have more time to plot an intercept. For instance, the *Falcon 3.0* pilot will be able to perform a stand-off intercept and smoke MiGs without visually acquiring them. For more information on intercept geometry, the *Falcon 3.0* pilot is urged to read *Fighter Combat: Tactics and Maneuvering* by Robert Shaw. This is "the book" on aerial combat maneuvering and should prove to be of extreme interest to the avid *Falcon* pilot.

Maintaining Control

Of interest to those who will fly in the game's High-Fidelity flight model will be the absence of G-blending. This is where a certain amount of yaw rate is incorporated into roll. An example of this occurs when one rolls from wings level to 45 degrees but maintains a course at high speed. In other simulators, this roll would turn into a bank. In *Falcon 3.0*, the F-16 will not begin to turn until a certain amount of backpressure is applied to the joystick.

Hands-on Experience

When actually flying the aircraft, it may behoove a pilot to look into an aftermarket control item such as the *Thrustmaster*. This device allows one to experience HOTAS (Hands On Throttle and Stick) flying. Since there are a myriad of keyboard commands, taking one's eyes off the screen for just an instant could make the difference between an aerial victory or a fiery defeat. The *Thrustmaster* allows one to control several functions including throttle, radar modes and many other flight controls without one having to touch the keyboard or look down.

Now You (Still) See Him...

Another interesting feature is the "padlock" view. When this view mode is selected from within the cockpit, the entire field of view will scroll while keeping

the target at the center. During a pass, for example, the field of view will track the target and remain locked on it. The pilot will have the illusion of turning his head to follow the target. One must then fly the aircraft's HUD into the field of view of the target.

Connectivity

If one selects the communications portion of the main menu, one will be able to link up two computers either via direct link, which may support CompuServe's MTM (Modem-to-Modem) lobby, a modem connection or a network connection. Two *Falcon 3.0* pilots, in addition to dogfighting one another, may fly joint air-to-air missions in which they can fly in formation and attack bogies in such combinations as two versus one, two versus two, or two versus many. *Falcon 3.0* is also the first Spectrum Holobyte simulation in their EBS or Electronic Battlefield Series. Eventually, it will be able to achieve a connection with their forthcoming *A-10 Avenger* and *AH-64 Apache* simulators.

Something to Look At (Again and Again)

The TACTS menu option is the "Black Box" and a VCR feature. TACTS gives a 3-D wireframe view of the action with exciting visual enhancements. The terrain is fractal-generated, there is a gradient horizon and the weather can vary depending upon one's altitude. Objects in the simulation are polygon-filled. There are a number of bitmapped maps and digitized animations in the package as well. Graphic flourishes abound, such as the landing gear retracting and extending in the outside views and some of the animations sequences — particularly a digitized twenty-one-gun salute after dying.

In summing up this preview of *Falcon 3.0*, one word comes to this playtester's mind—depth. Deeper than *Their Finest Hour*, deeper than *Red Baron*, *Falcon 3.0* is not merely a game. It is a complex modern air combat situational awareness simulator that may boggle beginners, but will provide the expert with hours of "top-flight," in-the-cockpit excitement! **cgw**

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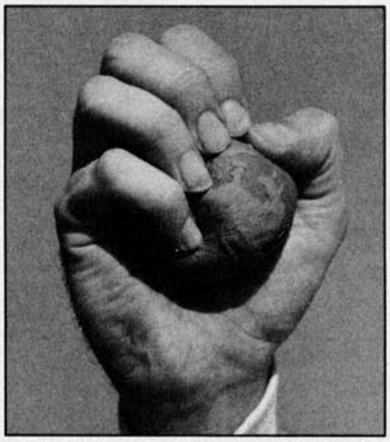
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If you are not currently a CompuServe subscriber, you can join by calling (800) 848-8199 and mentioning that you are interested in Modem Gaming.



For a good dogfight, contact Mike "Moondawg" Weksler in the Modem Games Forum or MTM Lobby on CompuServe at [76711,27]. F-16 COMBAT PILOT or KNIGHTS OF THE SKY.

A computer modem club is forming in the Nassau County area of Long Island, NY. Organized competitions in strategy and simulation modem games will be arranged. Interested parties should contact South Shore Computer Modem Club, PO Box 017, Baldwin, NY 11510.

By Area Code

Seeking COMMAND HQ players in Southern California area. Call Alan Emrich at Home-(213) 420-7800 (Long Beach, CA). Be careful, I'm *very* experienced at this game!

Avid modem gamer seeks opponents for 688, COMMAND HQ, TANK, KNIGHTS OF THE SKY or F-16 COMBAT PILOT. Call Steve Pottash in Philadelphia, PA at Work-(215) 877-3895; CompuServe: [70032,3210].

Confrontation sought for modem play of COMMAND HQ, EMPIRE, et. al. Will face-to-face other computer wargames including BATTLES OF NAPOLEON, ACTION STATIONS, REACH FOR THE STARS, GENGHIS KHAN, ANCIENT BATTLES and many more. You name it, I'll play it. Contact Bill Whiteford (Denver, CO) H-(303) 757-7247.

Modem opponents wanted for POWERMONGER. Will trade files for EMPIRE or OMEGA (Atari ST) by mail or modem. Call Paul Schwartz (Toronto, Ontario, Canada) at H-(416) 461-8739.

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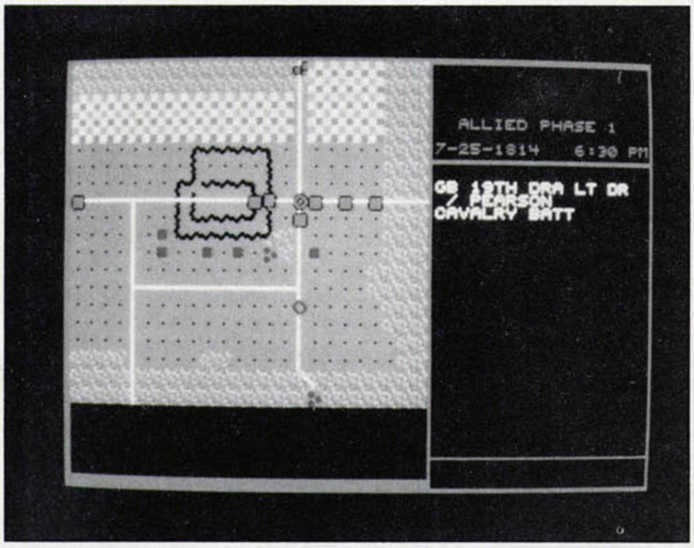
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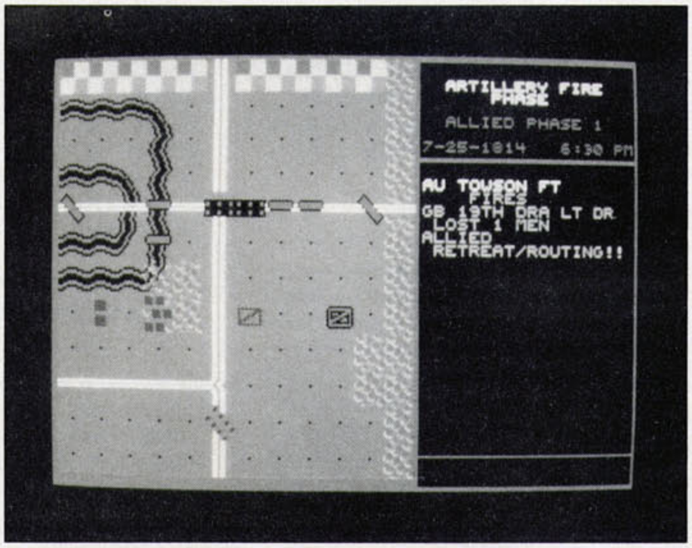
Seeking an opponent to play COMMAND HQ by modem. 815, 708 and 312 areas preferred, but will play other area codes on Saturdays and late at night. Contact Keith Brown (Elgin, IL) at H-(708) 888-3753; W-(708) 695-2999; Fax-(708) 695-2177.

Serious gamer seeks opponents for 688 ATTACK SUB or FALCON AT. Call John Tran (Laguna Niguel, CA) at H-(714) 363-1235; Modem-(714) 363-1235. Locals preferred. Available evenings and weekends.

Veteran Warriors wanted for the following games: FALCON 3.0, AVENGER A-10, COMMAND HQ, KNIGHTS OF THE SKY and MODEM WARS. You can reach me on GEnie [M.Dultz3] or call Marc Dultz (Bayside, NY) at H-(718) 465-3292 after 9pm EST. Be sure to bring parachutes and fire extinguishers!

COMMAND HQ opponents sought in local area (I love modem gaming but hate long distance bills). Call Stu Flood (Salt Lake City, UT) at H-(801) 773-2495 evenings and weekends.





The Battle of Lundy's Lane

A War of 1812 Scenario for SSI's Battles of Napoleon

by Gilbert Collins

In the quiet farm lane of William Lundy was fought one of the most vicious battles of the War of 1812. In the hot summer evening of July 25, 1814, British and American forces engaged each other in hand-to-hand combat on a tract of ground barely a mile square. When the fight was over, 2000 men were killed, wounded or missing in action. Tactically, the battle was a stalemate, but it turned out to be a strategic victory for the British.

For many years, aficionados of the War of 1812 have waited in vain for titles to appear on the horizon. Even in the board game hobby, they were few and far between. In the computer game hobby, they were nonexistent. Finally, when **SSI** produced *Battles of Napoleon*, complete with its design-your-own feature, it was a dream come true. It had finally become possible to be able to recreate some of the battles from the War of 1812 on the computer.

With SSI's design menu, one merely has to punch in the data and draw the map utilizing their "draw map" feature. This is all after meticulous research, of course. If any particular information seems missing, one can always fall back on the default settings. After all, who is to say what the morale value of the Incorporated Militia at Lundy's Lane was? One can only read the accounts and make an intelligent estimate.

The possibility of someone requiring American units was, alas, not foreseen (they are absent). Since players can rename units, however, this is no barrier to play. Using the Austrians as U.S. troops will give them the designation "AU" and one can think of them as "American Units."

One factor that makes it easier to model these actions is that the battles of this war were on a much smaller scale than the great European battles. The area of Lundy's Lane, for example, would fit approximately in the area of the Hougomont at Waterloo. Also, the size of the forces involved might seem a little amusing at first. Drummond's whole army is about the size of a British brigade. For those used to playing the Waterloo scenario, this one is going to seem very small. It was on such small actions, however, that the War of 1812 was decided.

One advantage to these smaller scenarios is that they are good learning tools for new players. With so few units, one is forced to preserve his forces carefully. On this scale, the player will find that it is akin to playing miniatures without all the time-consuming calculations.

Design Notes for Entering Data

It is most realistic to set the possibility of cavalry charges and, consequently, infantry forming square at low. Cavalry charges were rarely done in North America at this time, though there were at least two notable exceptions. Crysler's Farm and the Battle of Moraviantown each featured a cavalry charge (but the infantry did not form square).

The flank companies were often detached in this war, unlike Wellington's system of keeping them attached to the main body. For 1812 scenarios, one should give these units a favorable OP modifier and allow them to form 100% skirmishers. Then, since the light companies were really the skirmish units in North America, it is a good idea to keep

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British Units

#	Name	T1	T2	T3	Men	Sk Guns	Start Eff.	Melee	Weap.	Max Eff.	Atta. Lead	Sup. Lead	Arr **	X,Y
90	19th Drag.	1	1	3	70	—	78*	6	3	7	—	32	0	15,7
91	103 Lt Co.	0	1	28	70	70	90*	3	0	9	—	32	0	9,8
92	Glengarry	0	1	28	350	350	90*	3	0	9	32	32	0	4,13
93	Inc.Militia	0	11	28	190	20	50	2	0	6	31	32	0	16,8
94	8th Lt Co.	0	1	28	120	120	90*	3	0	9	—	32	0	18,8
95	Royal Scots	0	0	28	250	25	75	3	0	7	30	33	0	15,2
96	2/89th	0	0	28	400	40	90	3	0	9	33	33	0	15,4
97	41st Lt Co.	0	1	28	70	70	90*	3	0	9	—	33	0	15,3
98	8th (det)	0	0	28	500	50	89	3	0	8	—	33	0	15,1
99	Tompkins	2	3	28	36	2	98*	1	11	9	—	33	0	15,5
100	Rockett B	2	3	28	12	1	50	1	10	5	—	33	0	15,0
101	104th FlCo	0	1	28	120	120	95*	3	0	9	—	34	7	0,8
102	8th(5 Cos)	0	0	28	330	33	80	3	0	8	—	34	7	0,8
103	103rd	0	0	28	350	35	98	3	0	9	34	34	7	0,8
104	Royal Scot	0	0	28	250	25	78	3	0	7	—	34	7	0,8
105	Militia	0	11	28	78	10	50	2	0	6	—	34	7	0,8
106	Makonachie	2	3	28	72	3	98*	1	7	9	—	34	7	0,8

* = These units have O.P. modifiers of 1, the rest 0. ** = Units arriving turn 7 have 10 fatigue points.

the number of skirmishers in the line units to a minimum.

Alert designers will also keep the victory objectives simple when designing 1812 battles. On this scale, the forces were usually simply fighting for a specific piece of territory.

The leader objective phase is practically nullified because the armies were so small. The organization to be found in the War of 1812 usually consisted of an Army Commander and a number of brigades. Thus, there should be no corps and, perhaps, only one division. **csw**

American Units

#	Name	T1	T2	T3	Men	Sk Guns	Start Eff.	Melee	Weap.	Max Eff.	Atta. Lead	Sup. Lead	Arr	X,Y
0	25th	0	0	28	450	45	78	3	0	7	1	1	0	18,17
1	9th	0	0	28	300	30	78	3	0	7	0	1	0	11,19
2	22th	0	0	28	288	28	78	3	0	7	—	1	0	15,17
3	11th	0	0	28	350	35	78	3	0	7	—	1	0	13,18
4	U.S.Drag*	1	2	3	76	—	78	7	3	7	—	1	0	16,19
5	Boughton	0	11	28	140	14	40	2	0	5	—	1	0	17,19
6	Towson*	2	3	28	36	3	98	1	13	9	—	1	0	16,18
7	Stone	1	11	3	160	—	35	4	0	4	—	1	0	15,19
8	21st	0	0	28	849	85	78	3	0	7	—	2	5	16,19
9	1st	0	0	28	220	22	78	3	0	7	2	2	5	16,19
10	23rd	0	0	28	500	50	78	3	0	7	—	2	5	16,19
11	19th	0	0	28	64	10	50	3	0	5	—	2	5	16,19
12	Biddle	2	3	28	36	3	74	1	7	7	—	2	5	16,19
13	Ritchie	2	3	28	36	3	74	1	7	7	—	2	7	16,19
14	2nd Rif*	0	1	28	50	50	90	2	1	9	—	2	7	16,19
15	17th	0	0	28	50	—	50	3	0	5	—	2	7	16,19
16	Dobbs	0	11	28	300	30	54	2	0	6	3	3	8	16,19
17	Smith	0	11	28	300	30	54	2	0	6	—	3	8	16,19
18	Fenton	0	11	28	254	25	54	2	0	6	—	3	8	16,19

* = These units have an operational modifier of 1, all others are 0.

Abbreviations Used

Arr.	Arrival
Atta.	Attached
Brig.	Brigade
Cos.	Companies
Det.	Detachment
Div.	Division
Drag.	Dragoons
Eff.	Effectiveness
Fl. Co.	Flank Company
Inc.	Incorporated
Lead.	Leader
Lt. Co.	Light Company
Max.	Maximum
O.P.	Operation Point
Rifl.	Rifle
Rockett B	Congreve Rocket Battalion
Sk.	Skirmishers
Sup.	Superior
Weap.	Weapon
X,Y	Start coordinates

Overall Strength

Type	American	British
Infantry	4223	3198
Cavalry	236	70
Guns	9	6

Victory Point Squares: 10,8 — 500 points to both American and British; 15,0 — 1000 points for the Americans only; 16,19 — 1000 points for the British only.

Victory Levels

U.S. Major	< -1400
U.S. Minor	-1399 to -900
Draw	-900 to 999
British Minor	1000 to 1499
British Major	> 1500

Leader Organization Tables

##	Size	Name	Superior	Bonus
British				
30	Army	Drummond	61	10
31	Div.	Riall	30	08
32	Brig.	Pearson	31	10
33	Brig.	Morrison	31	12
34	Brig.	H. Scott	31	10
American				
0	Army	Brown	61	10
1	Brig.	W. Scott	0	10
2	Brig.	Ripley	0	08
3	Brig.	Porter	0	10

Setup Information

Number of Turns: 10
Date/Time: July 25, 1814, 6:00pm
Fire Tables: No Change
Reinforcement square #1: 15,0
Reinforcement square #2: 16,19
Reinforcement square #3: 0,8

Computer Gaming World presents:

Dogfight at the PC Corral

WWI Air Combat Simulators in Review

Starring Wings, Blue Max, Knights of the Sky *and* Red Baron

by Mike Weksler

All of the following simulations were flown on Amiga 500 or 33MHz 386.

"They are the knighthood of this war, without fear and without reproach; and they recall the legendary days of chivalry, not merely by the daring of their exploits, but by the nobility of their spirit."
—David Lloyd-George

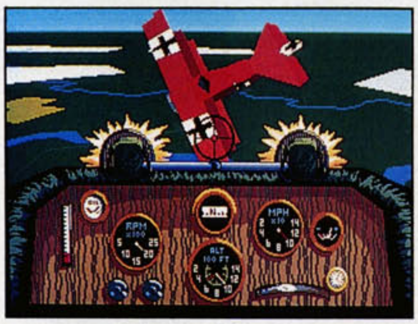
Multiple Choice

Currently, there are four major computer games based on World War One air combat: *Wings* by **Cinemaware**, *Blue Max* by **Three-Sixty**, *Knights of the Sky* by **MicroProse** and *Red Baron* by **Dynamix**. Each of these games is unique in its own right, with its own emphasis or set of priorities of what the game is trying to accomplish. Therefore, the goal of this article is to inform players as to which of these programs have appropriate features and appeal to meet their particular needs.

Flapping *Wings*

Before the real comparison begins, an explanation of why *Wings* will not be pitted directly against the others in the survey is definitely in order. *Wings* was initially developed for the Amiga platform and approaches its subject matter from an entirely different perspective than the others. *Wings* is analogous to watching the epic WWI silent motion picture of the same name and being magically transported into it as the star. This is what the designers had set out to accomplish in the beginning — providing a rich gaming experience rather than a straight air combat simulator (it is even described in the documentation as a "personal combat simulator"). The emphasis is, in *Wings*, more on advancing the character than on the plane itself. Indeed, the descriptions of occurrences in the war are actually kept in a journal by the player's character.

Like in previous Cinemaware games, one must prove adept at several arcade sequences. There is a 3-D flight simulator, but the simulated flight is choppy and gives more of an "arcade" feel than that of a simulator. The player begins his career in flight school "earning his wings" by completing a random arcade sequence. Once wings are assigned, the player may join up with the



Knights of the Sky

56th Aerosquadron for a career in the air service. The period music is extremely effective at evoking the emotions that the words and pictures on the screen portray. One feels like a WWI fighter pilot, even if the "simulation aspect" is so limited it precludes the player's ability to fly like one.

Blue Max: Three Games in One

Although *Blue Max* has many of the earmarks of a sophisticated simulation, it lacks the historical depth and "realism" of either *Knights of the Sky* or *Red Baron*. One can play a solo or two-player version of *Blue Max*. However, with two players, the game is only displayed on a split screen and they must either share the keyboard or have one player use the joystick and the other use the keyboard. Interestingly, *Blue Max* also offers a tactical game reminiscent of a strategy board game. It is the only one in the survey to offer this feature.

Blue Max's campaign game gives players the option of flying on either side and, while the graphics are adequate, the *Blue Max* "flight model" does not perform to the standards set by the remaining two WWI air combat simulations in that they are "generic" rather than model-specific.

Graphics can only be labeled adequate because, although *Blue Max* possesses nicely drawn cockpits, pilots who desire full instrumentation must choose a partitioned screen which shrinks the action screen to a teeny-tiny square! Of course, seat-of-the-pants flyers can have a larger action screen with the default setting.

Additionally, it seems that little thought was given to the layout of the basic "command keys" necessary to pilot the air combat simulator aspect of the game (which is surprising, since the game positions itself to be a "simpler alternative" to the next two). While one can use, for instance, the plus key to increase throttle, it is only the plus key on the keypad and not the one on the keyboard which works. Pressing the plus key on the keyboard calls up a rear view! So, in spite of VGA graphics, Sound Blaster support (including the innovative sound of enemy planes buzzing by one's cockpit) and a VCR replay utility, *Blue Max* is likely to suffer when compared to the other WWI air combat simulators for those seeking flight models with more historical realism.

For that gamer, *Knights of the Sky* (*KOTS*) and *Red Baron* are both outstanding technical achievements in the genre. They are well-designed, well-implemented and full of historical depth. Here, then, is the showdown of the two heavyweight contenders in the WWI flight sim class.

Clash of the Titans

In *Knights of the Sky*, one's goal is to become the "Ace of Aces" by defeating enemy aces in aerial jousts. The player has the option of flying practice missions with random aircraft or, if he chooses, mixing it up with historical aces. The real entertainment (and educational) value of *KOTS* comes when one begins a campaign under the French or British flag.

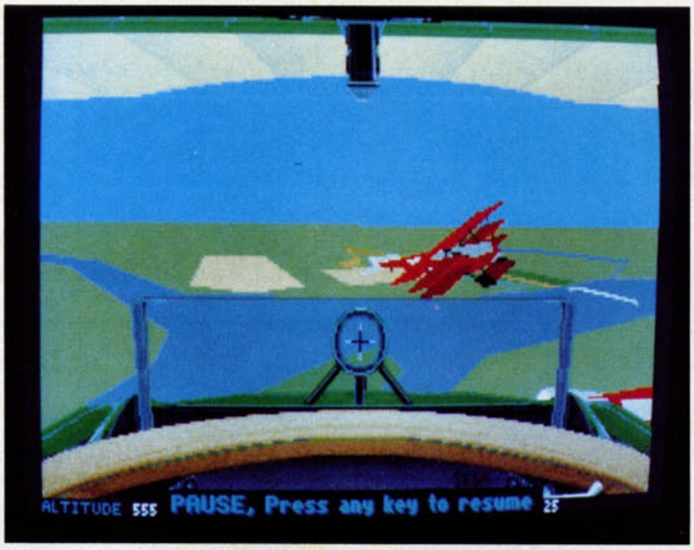
Sadly, the player may fly any of the German equipment *except* in the campaign game. This can be a real hindrance because the two best flying aircraft in the simulation are both German: the Fokker DR1 triplane (made famous by the Red Baron — Mannfred von Richthofen — himself) and the Fokker D.VIII. Both are highly maneuverable aircraft capable of out-turning the enemy in a close-in dogfight.

Period music and newspaper announcements provide total immersion into the environment of WWI fighter pilots. One is informed of pilots' victories and defeats (on both sides), as well as news concerning new aircraft under development. Missions are randomly generated over a historical battlefield. Two truly forgiving items in the

campaign option are the pilot resurrection capability and the ability to decline a mission. One is advanced in rank upon completing successful missions and, if the player performs in an outstanding manner, he is rewarded with the appropriate decoration.

In a typical *KOTS* campaign, one has several choices: fly a mission, challenge a famous ace, scramble to intercept incoming enemy aircraft or accept the challenge of a famous ace. Missions include escorting scouts, destroying observation balloons, ground attack and combat air patrol.

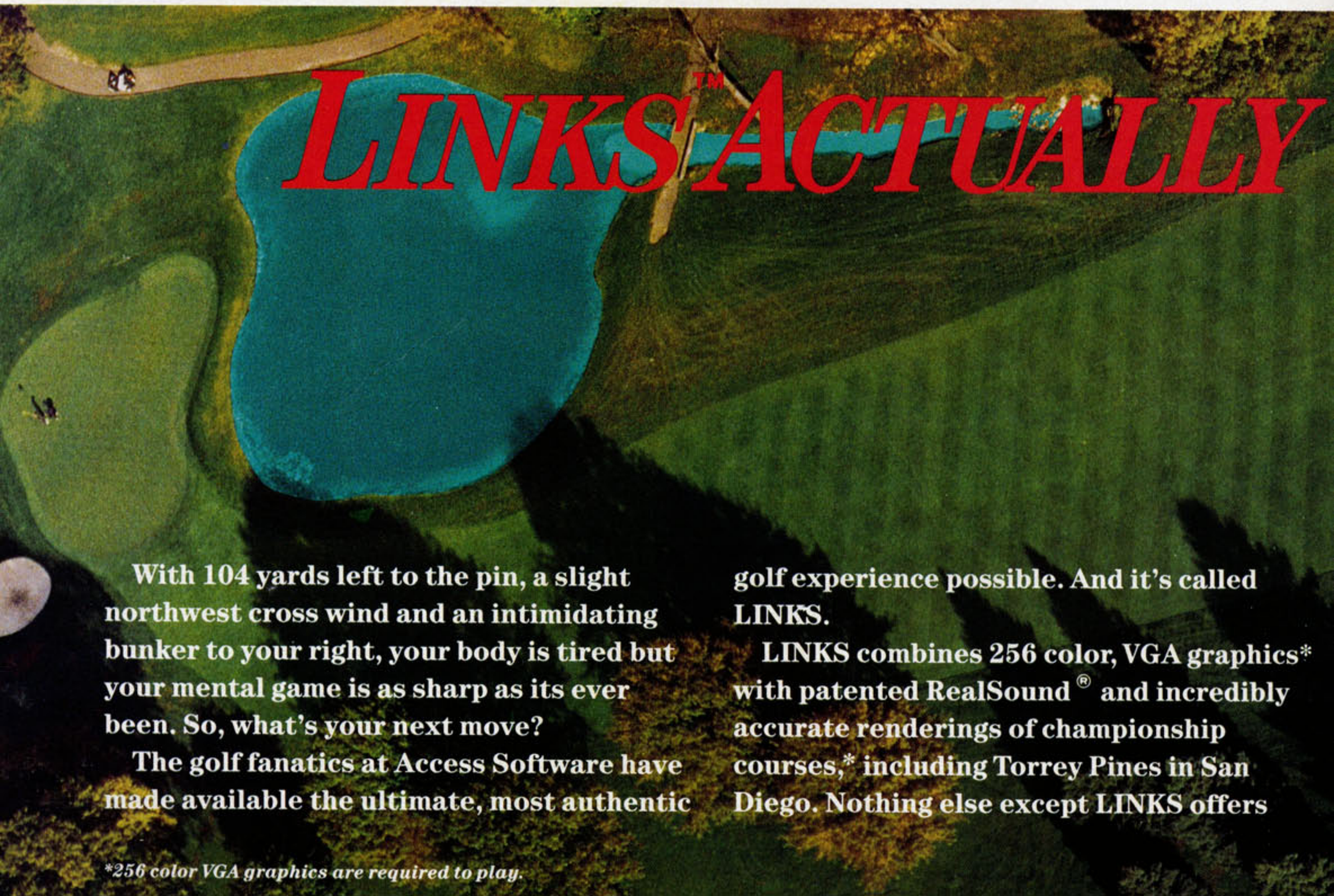
En route, one is (more often than not) bounced by enemy fighters. Even highly skilled simulator pilots will have their hands full with three lead-spitting Eindeckers in pursuit. Just when the situation looks hopeless, however, even more fighters appear to finish the player off — but wait... those are *friendly* markings! Soon, three friendlies dive in on the enemy, chasing them away or shooting them down. Friendly aircraft can also appear in the distance and, occasionally, are seen in mix-ups fighting "out yonder." One has the option of returning the favor (and diving into their fights) or flying on to complete the mission at hand. This reviewer found nothing finer than seeing a flight of friendlies forming on his wing to escort him back from a mission deep behind enemy territory. *[Ed: These interactions are only in the most recent upgrade, "Revision 2," of* KOTS.*]*



Blue Max

As one becomes more adept at dispatching enemy fighters, the gauntlet may be hurled by a famous ace who wishes to stop the player before he gets any better. When challenging or accepting the challenge of a famous ace, one can be treacherously jumped by the enemy before ever reaching the designated "field" of honor. After each mission the player is debriefed by reading newspaper clippings full of rumors as to what equipment a particular pilot is flying, who has been downing whom and what new equipment is due at the aerodrome.

One's initial impression of *Red Baron* is that it is a stunning visual feast. One may view the various aircraft available in 360-degree 3-D, fly missions, challenge a famous ace or embark on a campaign. The historical missions are interesting to fly since one may partake in the event from the perspective of either side. During a mission, one is given a bearing and range to find the action. It's best to have the maps included in the box handy for this type of navigation. In *KOTS*, however, one always has the ability of invoking an overhead map with waypoints plotted upon it and one's aircraft position



plotted accordingly. Ahistorical, to be sure, but handy.

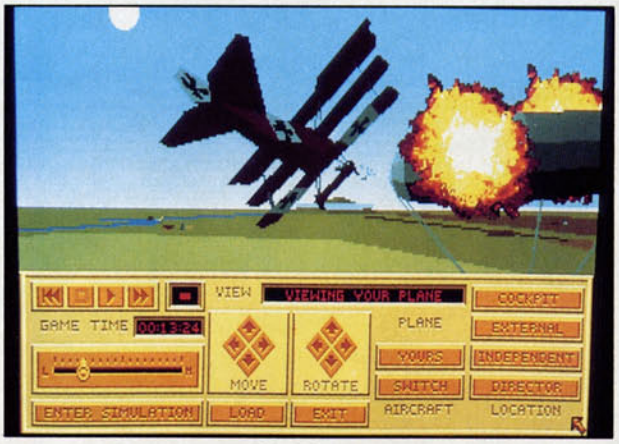
Campaigning in *Red Baron* is a series of the above-mentioned missions strung together to form a "campaign." The player is assigned a plane to fly and an aerodrome. Upon being briefed, one begins as a wingman in a formation. Unlike *KOTS*, there are never any friendly flights to rescue the player, nor is there any true randomness inherent in the campaign missions. Thus, in a campaign mission, it is always the player's flight against the world.

Often, the new pilot will become the flight leader when his former leader is shot down. One need not hesitate to shoot upon spotting aircraft, since it is guaranteed that they are hostiles.

Upon completing the mission's objectives, one quits the mission (there is no landing at an aerodrome, per se, as there is in *KOTS*). If the player lands behind enemy lines, he risks internment in a prison camp. In *Red Baron*, being shot down causes death. That's it! One's pilot is dead and the player must start over.

Flight Models R Us

In this reviewer's opinion, *Red Baron* has a less responsive feel than does *KOTS*, especially when recording a flight using the VCR utility. Specifically, aircraft in *Red Baron* possess a bit of a lag which will cause jet-reflex trained sim pilots to do some rethinking of their flight school maneuvers. Interestingly, even in the expert level of *Red Baron*, one doesn't stall in a Sopwith Snipe, even when it feels as though it should. Hint: Players should use this aircraft for Zeppelin raids as it can fly just above stall speed while almost vertical. It takes a lot of effort, but it can be kept from stalling for quite a while.



Red Baron

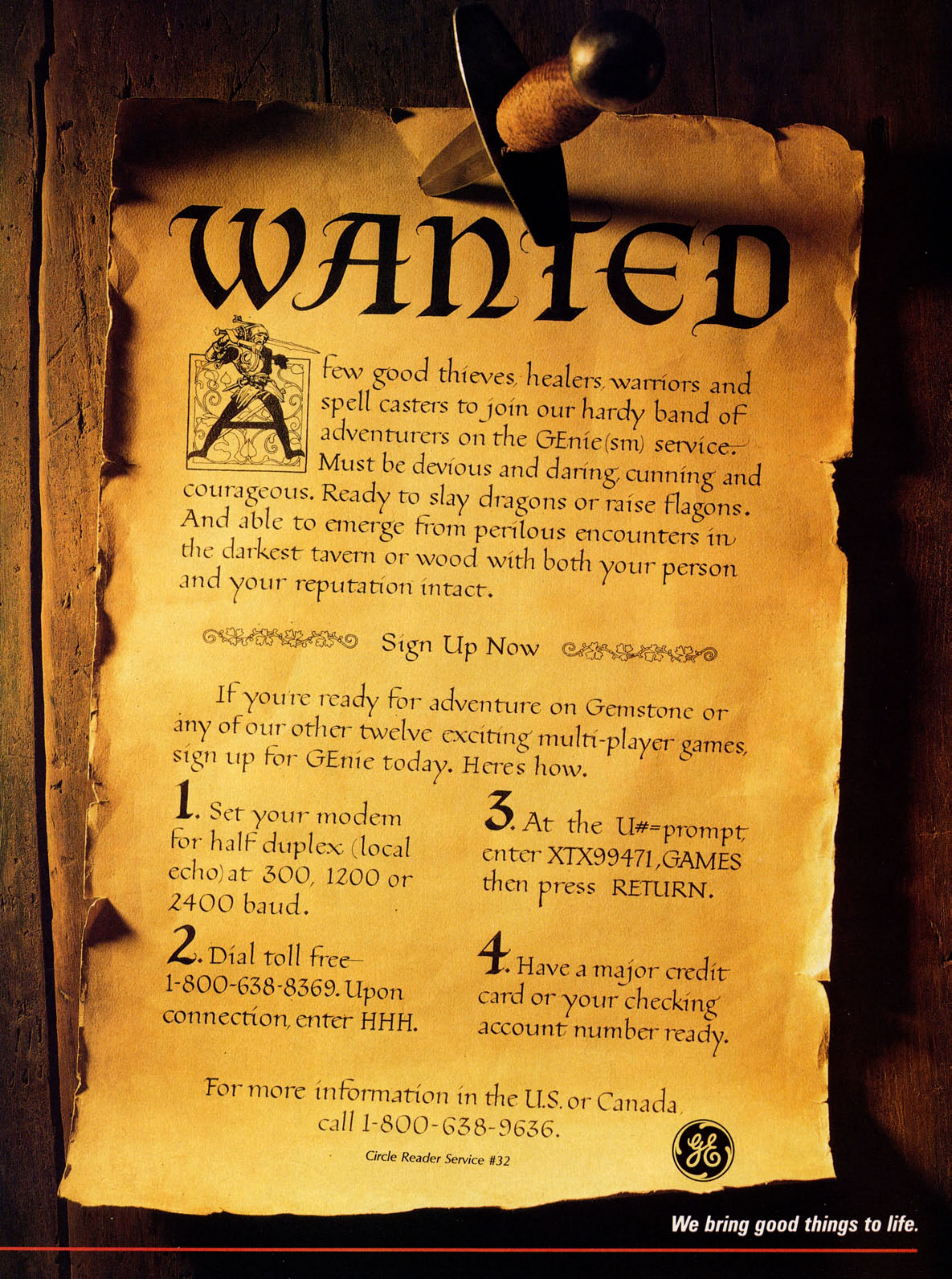
In *KOTS*, experienced pilots and flight sim jocks will immediately notice the definitive relationship between energy and maneuvering, which is not as crisp in *Red Baron*. Thus, maneuvering the aircraft in *KOTS* means one must concentrate more on maintaining high energy at all times, giving it the "right feel" to this reviewer. Any computer jet jockey will — after the breaking-in period where he must rethink his flying — be right at home with the flight model in *KOTS*, while the one in *Red Baron* might be better for more casual enthusiasts. Both work fine, but each has its emphasis.

Friendlies and Enemies

The "friendlies" in *Red Baron* are in your formation and, given the chance, they will shoot down anything in sight. In *KOTS*, as mentioned earlier, one has wingmen who will randomly chase the bad guys away. This reviewer does not recall an experience as intense as flying over the front and diving into a "furball" (aerial battle) to rescue some friendlies, then ending up taking on six enemy aircraft all alone! Fortunately, more friendlies dove from the clouds and, after a riveting dogfight, the good guys won.

The enemies in each of these simulators

(Continued on page 94)


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Managing Sensory Overload

F-16 Combat Pilot *Tactical Tips and Techniques*

by Scott West

As the air combat flight simulator gets more complex and sophisticated, the tactics that computer fighter pilots ("players") must employ to engage and destroy enemy aircraft are becoming more complex as well. Nowhere is this more evident than in the modern jet air combat simulators which are so popular in *CGW*'s games ratings. However, even though the simulated opponents in air combat simulations are continually improving, there is still no way that a computer-generated enemy can accomplish all of the things that a real person with a working knowledge of ACM (Aerial Combat Maneuvering) is able to do.

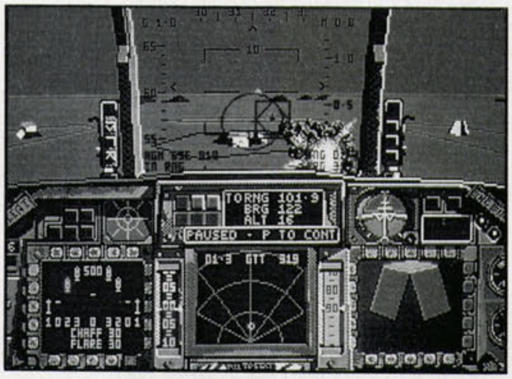
Fortunately, these simulations of modern aerial combat are now capable of establishing a link between two computers, adding a unique "human element" to every engagement. This article deals with flying and fighting within the simulated world of **Electronic Arts**' *F-16 Combat Pilot*. It is intended to equip modem-to-modem "pilots" with the knowledge necessary to be competitive in every head-to-head engagement.

Modem Connection Etiquette

Note: Experienced modem gamers can jump to the section called "Thumbs Up, Take Off." *Before rigging for modem connection,* decide which person will initiate the call and which color leader he/she will select. If both players have two phone lines, use one to communicate during the initial connection and if desired, as a "radio" to use in flight (double your phone bill, double your fun). As common courtesy, when one person makes the voice call, the other should initiate the modem connection.

When voice communication is unavailable during flight, use the following standards of non-voice communication:

Pause the simulation three times by using the pause [P] key when it is necessary to end the game abruptly; pause the game twice to inform one's opponent of a brief delay (e.g. doorbell ringing) where one is expected to return quickly; and pause the simulation one time to notify an opponent that the player has returned to the cockpit.



Rigging Modem Connections

Begin the simulation and enter the Missions Screen. Players must select "Gladiator Mode" from the missions screen and access the "Head-to-Head" options menu. Then, it is necessary to set identical baud rates and select the correct communications port.

If both pilots select the same color (i.e., "Red Leader"), the randomly generated starting distance between the bases will be greatly reduced. The average starting distance for bases of different colors is around 80 nautical miles and only around 50nms for bases of the same color. Although the difference of 30nms may *seem* insignificant, a closure at a distance of over 50nms can seem like an eternity — especially when long distance charges are ticking away.

When engaging via the phone lines, select the "Modem" option and bring up the "Modem" options menu. By selecting the "Auto Answer" option, the computer may time out waiting for the opponent to dial the player. It is best to select the "Manual Answer" after the first ring. Sometimes this will disconnect you. Be warned, it may take a few attempts to finally achieve the connection.

If a player is going to initiate the call, select either "Tone" or "Pulse." Then, either enter the phone number in the space provided by selecting "Dial" or enter a command to the modem directly by selecting "Send command to Modem." Those using a long distance phone company calling card for their modem might find this "Send command to Modem" particularly useful. For example, if one uses US Sprint, dial 1-800-877-8000 from the phone and wait for the tone. Next, dial 0, the area code and number of the opponent. Finally, select "Send command to Modem" and (quickly) enter your calling card number.

Thumbs Up, Take Off

Once connected, the player finds himself in the cockpit. The "Enemy Located" light flashes on the comm display with range and bearing to target. Note that this is not a relative bearing but rather the compass heading to fly to the target.

The Basics

If the range indicated is more than 50 nms, it is best to accelerate to full burner (zone 5) and steer off of the runway. Note that, eventually, players will end up at the same air base (provided they both chose the same color leader to start off closer). Pull up quickly, or expect a mid-air collision and, once airborne, fly out away from each other until a distance of 10 nms is reached, then close and merge.

Don't forget to yank the landing gear up! Nothing is worse than finally getting everything "tweaked" for a dogfight only to find that one's gear is damaged from not retracting it up at high speeds. A player will then be stuck flying at around 300 knots. If this happens, don't waste time — snap-roll, auger in and start again!

First Pass Encounters

When flying *F-16 Combat Pilot* against another opponent, the first rule is: *Do not smoke the enemy before the first pass.* Learn it, live it!

With the First Pass rule firmly in place, either achieve the same altitude as the enemy (horizontal pass) or fly above or below the enemy and pass in the vertical. After the pass, it will be up to the player to anticipate his enemy's moves. Remember, firing at even .2nms out before the pass is considered beyond poor sportsmanship and is frowned upon by most *F-16 CP* "jocks."

ACM (Aerial Combat Maneuvering)

The most noticeable difference between flying against the MiGs in the simulation

and a human opponent is that the simulated MiGs do not evade in the vertical. However, a player will find that even basic ACM maneuvers can be highly effective when used correctly against a human enemy.

Look behind right after the initial pass to see where the opponent's going. If he pulls a split-S, try a vertical half loop.

If he break turns and does not extend upward, cut back the throttle a little and try a high-G yo-yo. In this simulation, it is to the player's advantage if this maneuver is exaggerated almost into a hammerhead turn, climbing at an attitude of over 80 degrees before initiating one's own turn. If done correctly, use the rudder to assist in the turn. This will give one a distinct altitude advantage and, when diving, will regain any lost energy from the maneuver. Don't lag around up there or the enemy will have the player for lunch coming out of the apex of this turn.

If the enemy extends upward, counter with a split-S, coming out with full burner. More speed is thereby available, setting up the ability to maneuver into the enemy's elbow (providing he is coming out of an Immelman turn where he would lose speed).

A great "one shot" offensive (known as a "one shot" because no one will ever fall for it twice) is to extend upward at an attitude near 90 degrees immediately after making the initial pass. Climb until at least several thousand feet above the enemy. Then, ease off the throttles and perform a tight split-S. The enemy will see the player in his RWR (Radar Warning Receiver) either in front of him or behind him (providing that the player's APG-68 is active), but he will not know exactly where the player is in the vertical plane if executed quickly enough. Fly him into the firing parameters, lock him up and scratch one modem enemy. Chances are he was still trying to figure out where the player went when he was hit.

This author highly recommends a supplemental text on ACM such as Robert Shaw's *Fighter Combat: Tactics and Maneuvering* to enhance a player's working knowledge of modern dogfighting. This is "the book" on ACM.

Advanced Topics: Radar Use

After flying for awhile, players will notice that they can infer where the enemy is even when they do not yet have a "tally" ("tally ho" or visual contact) on him. The key is not to become dependent on looking at the RWR only. Instead, get a bearing on the enemy and fly to that bearing *with radar off*. Keep an eye on the UFCP (Up Front Control Panel) and it will tell the bearing to, distance from and altitude of the target. Using this information, one can infer the enemy's position *without* painting his RWR. After the merge, use the other views to see where he goes and watch the UFCP to maintain bearing, range and altitude. Right after the merge, watch the altitude first. Make sure he is not setting the player up for the "Boom" turn (i.e., the "one shot" described earlier).

Practice this with the MiGs in quick-start or any of the missions. Once one no longer relies on his APG-68, he will no longer give his location away as readily as he would otherwise. Think of this as a lesson in stealth fighting.

Engage and Destroy

Upon establishing weapons firing parameters, type a [D] for dogfight mode, immediately type [F9] to enter TWS (Track While Scan) and quickly type [F10] to invoke the STT (Single Target Track) mode. This will "lock up" the enemy and enable one to fire once the parameters are correct — i.e, when pulling a slight lead (Lead Pursuit) and not too close (within .5nms) for a missile shot. Fire, but do not fire and forget. The opponent may "spoof" (outfly or use countermeasures against) one's weapon, thus requiring another shot to finish the task. The deciding factor here is one's ability to enter the keystrokes fast enough while keeping the enemy within weapons firing paramaters.

Advanced MFD Configuration

One might find the following MFD (Multi-Function Display) configuration helpful when in combat: *left* MFD set to Weapons Stores function [F1]; *center* MFD set to APG-68 (the player's airborne radar); *right* MFD set to Flight stats [F3]. This configuration makes it easy to shut down radar as quickly as possible by hitting the [F2] key until the radar cycles through air-to-ground mode and then to another non-radar function such as the artificial horizon instrument. Please notice that if a [D] is typed, one will switch to the default Dogfight configuration.

Defensive ACM

Once the enemy is on the player's six o'clock at close range (within 1nm), give it up — a player may try a scissors or an extension move like a split-S, but if the opponent is good enough to get close in on one's six, he's probably good enough to finish off the job. One maneuver which this author seems to have luck with is the "Defensive Spiral". Basically, one spirals down in the horizontal, in tight turns. It will cause the opponent to overshoot the player and may give one the chance to put some distance between the two of you so the player can line up a quick shot.

One can almost guarantee the enemy will overshoot if suckered in close. Fake a scissors and then suddenly throw out the boards. The enemy will most likely be drawn into missile range. Then, begin the spiral. Remember to keep the break turning and keep the radius as tight as possible so as not to allow the opponent to shoot back. Of course, the player should not *keep* spiraling as the enemy will figure out what is happening and will initiate a high-G yo-yo to counter the maneuver. Just make him overshoot and then get clear fast.

Players have to watch their Gs, however. A maneuver like this can black a player out *real* fast, making him a "1-G target." If this happens, just hope that the enemy blacks out trying to pull lead!

Paranoid Jinks

If fired at from a distance, don't wait until having a tally to jink. It's like playing chicken; judge incoming fire from its distance and its relative position. Try a high-G move on it. If it's still following, then one knows it's far enough away that it can alter its course and still keep tracking the player. As it gets harder for the enemy missile to track, it's closer. Just keep pulling break turns 90 degrees to the missiles path and use countermeasures (Flare and Chaff) until it is no longer a threat.

One trick that might be useful is to try to lure the enemy up into the clouds (Angels 30-35). The reason for this is that the simulated AIM- (Air Interceptor Missile) 9M's heatseeking head will not acquire the heat signature from a jet in the clouds. The enemy will see a TD (Target Designator) box in his HUD, but he will be unable to lock the player up! This is incredibly advantageous after defeating his only two AMRAAMs (Advanced Medium-Range Air-to-Air Missile). If one is on the offensive and the enemy runs for the clouds — this is what radar-guided AMRAAMs are for!

Final Word

A stand-off encounter where the players fire at each other from a distance is possible and challenging, but it is hardly as exciting as a close-range dogfight. Here's hoping *CGW* readers never get shot down on their own dime! Check six. **cgw**

Editor's Choice: The Hard Drive Retention

by M. Evan Brooks



Prior to his activation for Operation Desert Storm, *LTC M. Evan Brooks took a look at his hard disk. Here's what he found....*

Given the multitude of games released, I thought it would be both interesting and elucidating to note those entertainment products which the editors of *CGW* have retained on their personal hard drives. Such a choice is, of course, a very personal preference and may be somewhat unusual compared to what one may have expected from their prior writings. Even an editor/reviewer is entitled to the occasional genre difference for relaxation, however.

In looking over my list of games that have withstood the test of time, I note that there is a paucity of "hard-core" wargames and land conflicts. This is due to the fact that I want a "quick fix" after working on the more detailed simulations and the land simulations generally require the most extensive use of playing time. The games are noted in terms of chronological age on my hard drive:

Battlehawks 1942 (Lucasfilm): A flight simulation of the early Pacific air battles, this game was easy to learn, difficult to master and capable of multiple replayings. Being able to fly as either the Japanese or the American aviators offers a challenge which is still present and a simple flight can be accomplished in under ten minutes.

Empire (Interstel): A translation from the days of the "Hoary Mainframes," this war (executed over an infinite number of potential battlefields) still has the power to mesmerize. Granted that realism is subordinated to playability and that the graphics are somewhat dated, this product can still excite interest. Although playing time can be overly long, it remains a favorite.

SimCity (Maxis): Urban regional planning — if anyone had predicted that such a topic would be an outstanding product, the marketing departments throughout the industry would have quickly silenced that "voice crying out in the wilderness." With additional scenario disks now available and a "textbook" written by a "Gamer's Philistine," the beauty and replayability compel a long stay in the hard drive directory.

Hoyle's Card Games, Vol. I (Sierra): After a hard day at the office or after a difficult evening reviewing a grognard's specialty, this grognard likes to try a quick round or two of hearts or cribbage — as an enjoyable diversion. The treatment rendered herein justifies my regular returns to try "just one more round...."

Harpoon (Three-Sixty): The "Proustian memory" of contemporary naval warfare (detailed and lengthy). Detailed modelling techniques coupled with naval doctrine yield a long-time player — plus the additional scenario disks (GIUK, North Atlantic Convoys, Mediterranean and the Gulf) keep the program more than topical.

Risk (Virgin Mastertronic): A computer rendition of the famous board game. The EGA graphics are adequate. Its primary weakness is the rather limited ability of the computer artificial intelligence, however, if one is willing to make allowances and/or start in difficult positions (e.g. trying to seize Europe or North America from the beginning), the play value never seems to die.

Populous (Electronic Arts): A British import, this "deus ex machina" offers a multitude of scenarios, each of which require a slightly different strategy. Graphics and playability combine to make this a keeper.

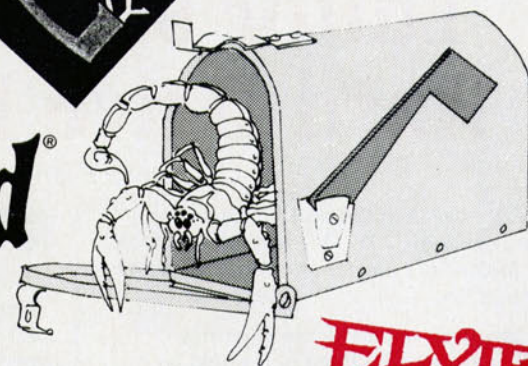
Their Finest Hour (Lucasfilm): The follow-on product to *Battlehawks*, this offers an improvement over an already fine system — graphics and playability have been enhanced, while a scenario generator and campaign game have been added for the more historically-minded players.

Sid Meier's Railroad Tycoon (MicroProse): Different historical environments and a detailed economic model coupled with superb graphics make this a gamer's delight. Even those who are not aficionados of railroading must admit that designer Sid Meier's elegant offering has gone a long way toward generating a deeper interest in the "Age of Rails."

Command HQ (MicroPlay): A gameulation of World Wars I, II, III and IV. The modem play option enhances a game that offers authentic human competition as opposed to mere human-versus-computer action. The replayability coupled with the graphics and quick playing strategy will net a steady place on the hard drive for this product.

Stratego (Accolade): An even newer release, this game is akin to *Risk* in terms of difficulty level and appearance. It reflects a standard board game converted into an elegant computer product and offers a number of options that were never available to board gamers (plus the ability to quickly save your favorite starting positions). **CGW**

Scorpion's Mail



It seems like only yesterday we were here among the mail sacks, and now we're in the back room again. (I *really* need to get this place enlarged; there's barely enough room in here for me, not to mention Fred and everyone else!)

Anyway, before we get to the good stuff, I need to say a few words about two types of requests that come in from time to time. One is from readers who would like to get into the reviewing business and the other is from people who want to get started as game designers.

Folks, I am a "contributing editor." That means I don't decide the freelance work that gets printed or not. Also, I do not: a) have the contacts necessary to get someone's game design published or b) have the time to review such game designs on a lark (be they on paper or disk). That's not my function here, and while I sympathize with people trying to break into the game market, there isn't anything I can do for you. So please do not request editorial comment on reviews or even game design from me. That's a service I can't provide.

Whew! Ok, now that we've gotten that out of the way, let's take a look at what arrived in the mailbags this month.

Bane Of The Cosmic Forge: Some people have reached a dead end in the castle. They've been all over (or at least as far as they can get), and wonder where to go next. That's easy: they have to get underneath the altar of RAMM. This can only be done by reading (and understanding) the Book of RAMM, which, in turn, can be obtained by using a certain gold key in the right place. Those who *have* made it down below sometimes find themselves stymied by the chasm, which requires more than a rope to get across. A visit to the Captain's Den will take care of that little problem. Also, a special note to treasure hunters (you know who you are!): if you want to pick it up, you're going to have to be rather bloodthirsty in regard to the only other person who knows where it is, or you won't be able to get it.

King's Quest V: A number of adventurers are having trouble with the end game portion. They've found the mysterious machine, but realize they are missing an important item to make it work. Where can it be? Try looking for Mordack's library. It's very close to his bedroom, although the way in may not be too obvious on the screen. Try going in all directions and see what happens. And remember not to let the cat out of the bag! (heh)

Savage Empire: So you need to do something about Fabozz, eh? Well, if you paid attention earlier in the game and did your lab work, you should be able to shed a little light on this problem.

Ultima VI: There's no way you're going to get in to see the Codex until you've been given the go-ahead at the Temple of Singularity. So you have to prove to the Temple that you're ready, and that means collecting a few new mantras first. And remember: you only have thirty days to get everything done!

Elvira: My letters indicate that there may be a contradiction (so I've heard) in the hint book with regard to the garden maze. One part tells you to go to the pond before the lair, while the map shows a route that leads through the lair itself. Well, the only way I know of to reach the lily pond is to go through the monsters' lair. If you've been looking for some route to get around that spot, you might as well give it up and fight your way through. Sorry about that.

Quest For Glory II: Some people are wondering how they can persuade Rakeesh to give them his neat-o sword. Well, first of all, he will give it only to a fighter. If you're a mage or thief, better hunt around for some other way of dealing with the Earth Elemental. Second, Rakeesh is a very honorable sort of guy, and he won't hand it over to just anyone, even if you are a fighter. So we'll hope you've been walking the straight and narrow path through the game to this point, in which case, you shouldn't have too much trouble getting your hands on that weapon.

Fool's Errand: The High Priestess' puzzles are giving some people fits. This is because they are trying to solve them too soon in the game. You have to do all the puzzles that give you the Keys of Thoth before you can complete the High Priestess section, because what you see when you get a Key of Thoth (watch carefully!) will help you to solve the enigmas that come up in the High Priestess section. You don't have to leave the High Priestess for last, just make sure you have all the keys first.

Spellcasting 101: The best time to do the spell simulator is *after* the university is deserted. Also, get your spells and timing down right here, since later in the game, you will have to do all that stuff "for real," and you don't want to make any mistakes then.

Well, that's about it for this look into the mailbag. Remember, if you need help with an adventure game, you can reach me in the following ways:

On Delphi: Visit the GameSIG (under the Groups and Clubs menu). **On GEnie:** Stop by the Games RoundTable (type: Scorpia to reach the Games RT). **By US Mail:** (enclose a self-addressed, stamped envelope if you live in the United States): Scorpia, PO Box 338, Gracie Station, New York, NY 10028.

Until next time, happy adventuring! **CGW**

Circle Reader Service #37 »

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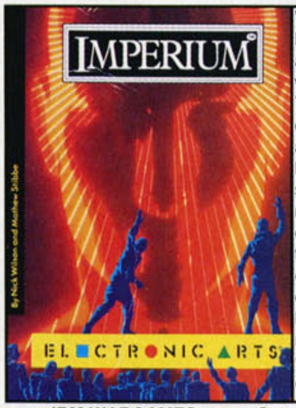


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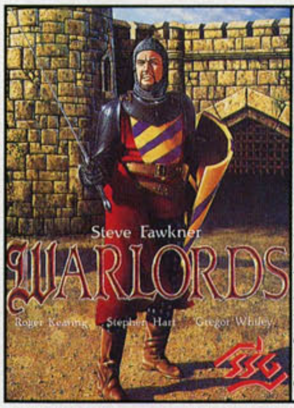
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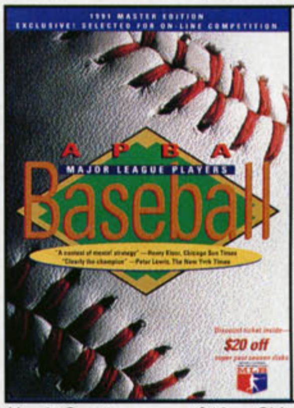


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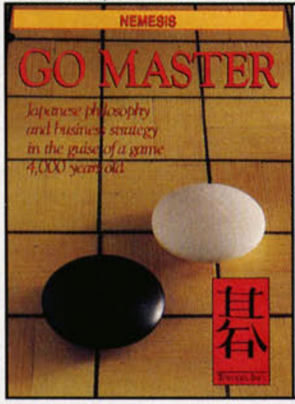
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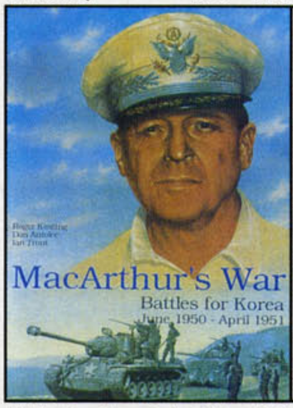
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'BREACH 2' from **MINDCRAFT** is sci-fi tactical combat at its best. You control each individual trooper in a turn based strategy game. Your enemies are intelligent aliens, robots, alien wildlife, and enemy troopers. Your squad leader progresses through each mission raising his abilities. Twelve missions and a mission builder are included. Scenario disks are available. **$19**

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"Cogito Ergo Ludo" ("I Think, Therefore I Play")

Highlights from the 1991 Computer Game Developers' Conference

Over 500 designers, reporters and "wannabes" attended this year's conference. The festivities began with a marvelous reception hosted by **Apple Computer**. The significance of the sponsorship was very quickly revealed. Apple has rediscovered the home market! Now, the very company which refused to put a joystick on their new line of Macintoshes because it might be confused with a game machine has decided to encourage game development. It was a very encouraging start, indicating that computers do not sell based on spreadsheets and desktop publishing alone.

"I Think, Therefore I Play" turned out to be a very useful theme for this year's conference. Conference sessions dealt with "intelligent" computer opponents, thought-provoking subject matter for games, thoughtful game criticism and theoretical thought.

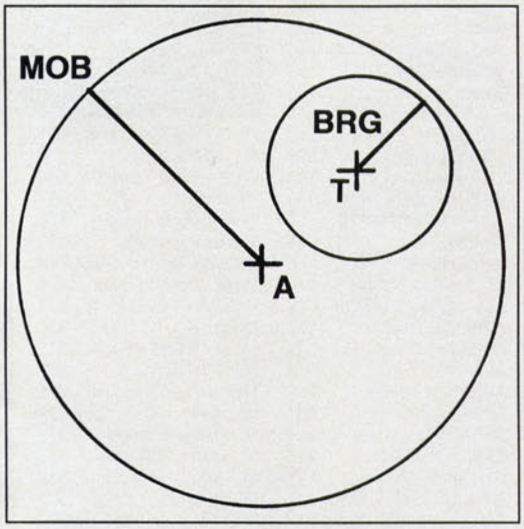


Figure 1 – Kirby's Approach

Intelligent Behavior Without AI: An Evolutionary Approach

Neil Kirby, designer of a multi-player version of *Star Fleet Battles* that runs under **UNIX** and a technician at **AT&T Bell Labs**, spoke of the challenge of programming intelligent behavior into computer-operated objects. Kirby shared from his background of working with three vehicle simulations that run under UNIX System V. The major focus of his presentation was to design behaviors that appear to be intelligent without having to resort to the intense and sometimes controversial discipline of "artificial intelligence."

First, Kirby suggests that the programmer/designer begin with simplistic behavior (i.e. whatever is easiest to code). He offered an example of such a primitive algorithm in which a unit (in this case, an armored vehicle) simply selected the closest enemy unit, turned to face the enemy, moved to close and attempted to fire.

Next, one observes the simplistic behavior and notes the problems with the behavior. Kirby's example noted that his primitive algorithm caused units to lose their central forward armor and take unnecessary internal damage while the flanks were untouched.

These observations should lead to construction of parameters that can in turn lead to successful behavior. In the case of Kirby's example, he solved the initial problem by having the unit move a shorter distance in order to have "movement points" left at the end of its movement toward the selected target. The vehicle would use the remaining "movement points" to rotate its strongest armor toward the closest enemy unit. Hence, maximum defense was always available.

Second, the parameters established by observation should be quantified into new algorithms so that the program is able to utilize the parameters in evaluating potential behavior. In Kirby's example, the solution was codified into a basic closure code where relative bearing and the integer values of forward armor were the quantified parameters.

Finally, Kirby urges designers to test, test, test. Repeated observation indicated that the armored units tended to lose all three facings of their forward armor, but would still continue closing on their target until they had taken fatal damage.

Thus, the process begins again. Kirby decided that each unit needed to evaluate its condition prior to movement and proceeded to develop algorithms for a self-assessment.

Even at this point, however, Kirby noted that the maneuver code was too predictable and human opponents could easily take advantage of the computer opponent's inflexibility. Hence, he began to adjust the maneuver code to reflect weapon strengths. Kirby used each weapon's effective range (for both the attacker's and target's weaponry) as one of the quantifiers in this revision of the code (BRG). A branching was established by asking the two questions: "Where can a unit go?" and "Where does a unit want to go?" In an ideal situation, the mobility of the attacking vehicle would encompass the target, but allow the attacker to remain outside the target's effective weapon range. This state is illustrated by "Figure 1 – Kirby's Approach."

The basic idea of Kirby's philosophy in programming artificial opponents is to keep it simple, relying on observation and testing to help one develop practical and efficient solutions. Although Kirby did not specifically put it this way, the technique definitely allows designers to keep the cart (programming) behind the horse (game design).

A Practical Approach to Game A.I.

Jon Freeman is a veteran computer game designer (he founded **Automated Simulations**, the computer game company which became **Epyx**) and science fiction author. His computer game credits include the best-selling *Archon* and the recent *Swords of Twilight*. Interestingly enough, many of Jon's observations dovetail nicely with Neil Kirby's lecture.

Freeman observed that the problem is not creating an invincible opponent, but creating a "good loser" (a challenging opponent who "seems" to make enough good moves to imply an overarching strategy). A major problem with programming the artificial opponent, he noted, is that for most games, human opponents have not actually played the game. So, the designer/programmer doesn't really know *how* a human is going to proceed.

One method of designing the artificial opponent, which Freeman shared, is to analyze the goal of the game, establish rules for achieving the goal and design an opponent that follows those rules. As an example, he took the idea of *Monopoly*. Since the goal of *Monopoly* is to bankrupt the other players by collecting more rent than they do, an initial goal for

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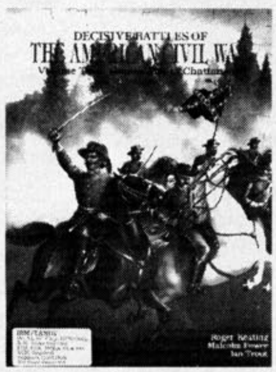
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Additional battles may be found in SSG's Magazine RUN 5.

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SCI-FI

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the artificial opponent would be to establish the most probable properties for other players to land upon. In *Monopoly*, Freeman observed, probabilities are skewed toward the orange properties because of the likelihood of players rolling 6, 8 or 9 when coming out of "Jail." The artificial opponent would have rules for acquiring and developing properties based on probability and profit margins. Hence, the computer opponent which "works toward" the game's goal may seem to be a better player than the human players *because* it follows its own rules better than humans follow their rules.

Next, once the artificial opponent has an overall goal, one should define "special case" code. For example, an artificial opponent would not necessarily follow the same rules in a mid-game turn that it would use for a near endgame turn. So, Freeman observed that one should design an evaluation mechanism so that "special case" code can be implemented at appropriate points in the game.

One useful technique Freeman stressed was to "avoid the unforgivable error." He noted that, by working backwards from what one did *not* want the artificial opponent to do, one can create an opponent that "feels" right, even if the computer *never* makes a "good" move.

Perhaps the most practical point which was presented about designing the artificial opponent was to start with the numbers already available to the designer. Simple algorithms which consider such matters as number of targets/opponents (objective: reduce the number of opponents), distances (the closer target has priority) and hit points (the biggest is the priority target) can provide a quick and dirty outline for the artificial opponent code.

He also added some simple ideas from Chris Crawford for developing artificial opponents. In the past, Crawford has suggested the use of vast resources (i.e. lots of dumb or big enemies) to insure "challenge" without necessarily reflecting "intelligence." Other ideas include handicapping enemies and situations using point systems, spatial relationships (range, zones of control, etc.) and limiting the information available to human players.

In conclusion, Freeman suggested the development of a simple combat decision matrix that would indicate when a unit would normally attack and when that decision would be based on the artificial opponent's "personality" (i.e. "aggressive" or "defensive"). The question marks in "Figure 2 — Combat Decision Matrix" reflect the latter.

Death in Computer Games

This year's program was significantly enhanced by two debates. An informal debate was built on the subject, "Live or Let Die — The Computer Adventure Game Question." Ron Gilbert, one of the major talents in the development of **Lucasfilm Games**' graphic adventure engine and designer of *The Secret of Monkey Island* asserted that "Death is Bad Drama." Lori Cole, co-designer of the *Quest for Glory* series, proposed "Death as a Dynamic Plot Element."

Gilbert's main assertion is that the death of the player's character, the protagonist, destroys the "suspended disbelief" necessary to make a story believable and engaging. He strongly suggested that where suspension of disbelief is sufficiently strong, players with characters entering dangerous situations are scared enough, even if they know they won't die. To underscore his argument,

he used the analogy of Luke Skywalker in the *Star Wars* trilogy. He was greeted with a loud, "Irrelevant. We're talking different media!" from Lawrence Schick, designer of *Sword of the Samurai*.

Gilbert responded that he did not think the analogy was irrelevant because both film and computer games told stories. Both Lori and Lawrence asserted that the possibility of making fatal errors was a vital part of the interactive nature of the fiction.

Cole suggested that personal involvement is missing whenever the possibility of death is absent from a computer game. The game becomes mere amusement, because the player is not committed to performing at that higher plane where adrenaline flows and there is an emotional stake in the game.

Interestingly enough, both debaters conceded that their positions were not absolute. Gilbert said he did not object to death when it serves an integral part of the drama, but noted that it is not usually the protagonist who experiences this death. Cole stated that she disapproves of death which is so capricious that the player cannot develop an affinity for his/her character.

Good Graphics Versus Good Game Play

A formal debate was built on the proposition, "Resolved: that the creation of good graphics should receive higher priority in the development process than the creation of good game play." The "Chris 'n' Chris" barbecue session featured Chris "*Wing Commander*" Roberts with the affirmative position and Chris "*Balance of Power*" Crawford with the negative.

Roberts defended the proposition by insisting that graphics both *sell* games (after all, what good is a game that no one buys?) and enhance game play. He emphasized that value was present in graphics and noted that the increased production costs in providing state of the art graphics (and sound) require more emphasis on a game's looks.

Chris Crawford countered by suggesting that such emphasis on graphics was like trying to emphasize the sizzle instead of the steak. He also cited the success of classic **Infocom** games as examples of "good games" with *no* graphics. Of course, someone in the audience countered by asking where **Infocom** is today? Finally, Crawford admitted the value of graphics, but insisted that good gameplay offers *replay value*.

At the close of the debate, referee Brenda Laurel declared Chris to be the winner (without specifying which Chris). In summary, however, both sides agreed on the importance of a "strategic alliance" between graphics and gameplay where graphics attracts potential customers and gameplay keeps them. Crawford suggested that a 60:40 ratio between gameplay and graphics is probably a defendable proposition.

The Birth of a Medium

Brian Moriarty, designer of *Trinity* and *Loom*, gave a marvelous demonstration lecture which underlined an assertion made by fellow **Lucasfilm** designer Hal Barwood in another lecture. Barwood stated that while filmmakers sometimes play computer games, they do not think about them much. On the other hand, he commented, computer gamers (and, of course, computer game designers) think about movies all the time. Moriarty's lec-

		Human	
		Can't Attack	Can Attack
Computer	Can Attack	ATTACK	?
	Can't Attack	?	DEFEND

Figure 2 – Combat Decision Matrix

ture presented rare film footage and historical annotations as an instructive paradigm for computer game development.

Moriarty began his *tour de force* by recounting a wager between Governor Leland Stanford and some friends. Stanford bet that there was a time during a horse's gait at which all four feet were off the ground. To prove it, Edward Mowbridge placed twenty-four cameras in sequence and captured footage to convince Stanford's friends. By 1879, Mowbridge was projecting similar sequences by means of a primitive projector.

Perhaps most amazing of all, Moriarty noted that by 1889, one of Thomas Edison's employees had developed the four-hole format that is *still* standard in motion picture development. By 1894, kinetoscopes were showing a standard fifty feet of film at forty frames per second (which was later dropped to sixteen frames per second). The unspoken parallel with the computer game industry is that after more than a decade, computer game developers *still* do not have a universal standard.

The first commercial exhibitor was probably Andrew Holland. Holland placed five kinetoscopes in a row and charged viewers 25 cents to move down the row. Invention of the Latham loop enabled films to get longer. On December 28, 1895, Lumiere invented his own projector and showed ten movies in his basement to 35 paying customers. Such simple sequences as factory workers leaving a factory at quitting time, the Lyons Express arriving (people actually stood up and ran from this image), feeding a baby or playing cards were popular enough to gain a clientele of 5,000 people per week. Later, George Melies became the first commercial movie director. Melies produced 500 short films and the first 1,000 foot reel, "A Trip to the Moon." The unspoken parallel is that, initially, people will be fascinated by technological advances that seem to accomplish very little, but it will take continued sophistication and increasing effort to hold that fascination.

Moriarty moved to the period of Edwin S. Porter in the United States. Porter directed films from 1896-1915. Moriarty displayed short features like Porter's "Elopement on Horseback," "The Gay Shoe Clerk" and "The Great Train Robbery" for the group. The latter featured an early use of the rear projection screen technique, "special effects" like switching a dummy for a body, ability to cut between scenes without pure continuity (discovery of the "shot") and movement away from the proscenium-oriented (front of the stage view) camera. The unspoken parallel is that an art form does not really start to mature until it begins to exploit its differences from other media. In this case, computer games need to explore approaches to interactivity that film cannot match, just as film went beyond what the stage could provide.

By 1907, Lawrence Griffith (D.W.'s father) was to act in a film that illustrated something new about film. In "Rescue from an Eagle's Nest," there was a response to the audience's demand for *story*, as well as action. Prior to '07, production companies saw themselves as doing simple, cheap entertainment for the uneducated. The unspoken parallel to the computer game industry is that there are many computer games which overlook the necessity of story to complement action.

Finally, Moriarty reached the highlight of his address, a look at the work of D. W. Griffith. Griffith introduced the concept of the director as star, largely because no one wanted to be a director in his day. Griffith started with a one-reeler called, "The Adventures of Dolly." It was a simple "rescue the heroine" story about a girl who gets captured by gypsies. He grew aesthetically in the two-reeler, "Enoch Arden" and finally, reached the high point of his career in 1915. In "Birth of a Nation," a ten-reel pseudo-history of the U.S., Griffith simultaneously brought "respectability" to the film industry and made the first film banned in Boston. New techniques included the opening iris shot and some exterior shots with no outdoor lighting.

"Birth of a Nation" was shot for $110,000. Unfortunately, his next picture, "Intolerance," was to break him financially. *A la* Francis Ford Coppola and "One From the Heart," Griffith was to spend the rest of his life paying for "Intolerance". New techniques included night scenes lit by magnesium flares, but the film was essentially spectacle over substance. The unspoken warning was for computer game developers to be certain that their innovations are going to be worth the financial cost.

Computer Game Criticism

CGW's editor, Dr. Johnny L. Wilson, offered an address called "Pigs at the Pastry Cart." The lecture presented a contrast between what Wilson called "bandwagon reviewing" and the "critical task." Wilson contended that "bandwagon reviewers" major on the minors by asking marketing questions (i.e. graphics, sound, numbers of disks, pages in the manual, etc.). Wilson suggested that the critical task is to delve deeper. His critical manifesto strongly suggested that:

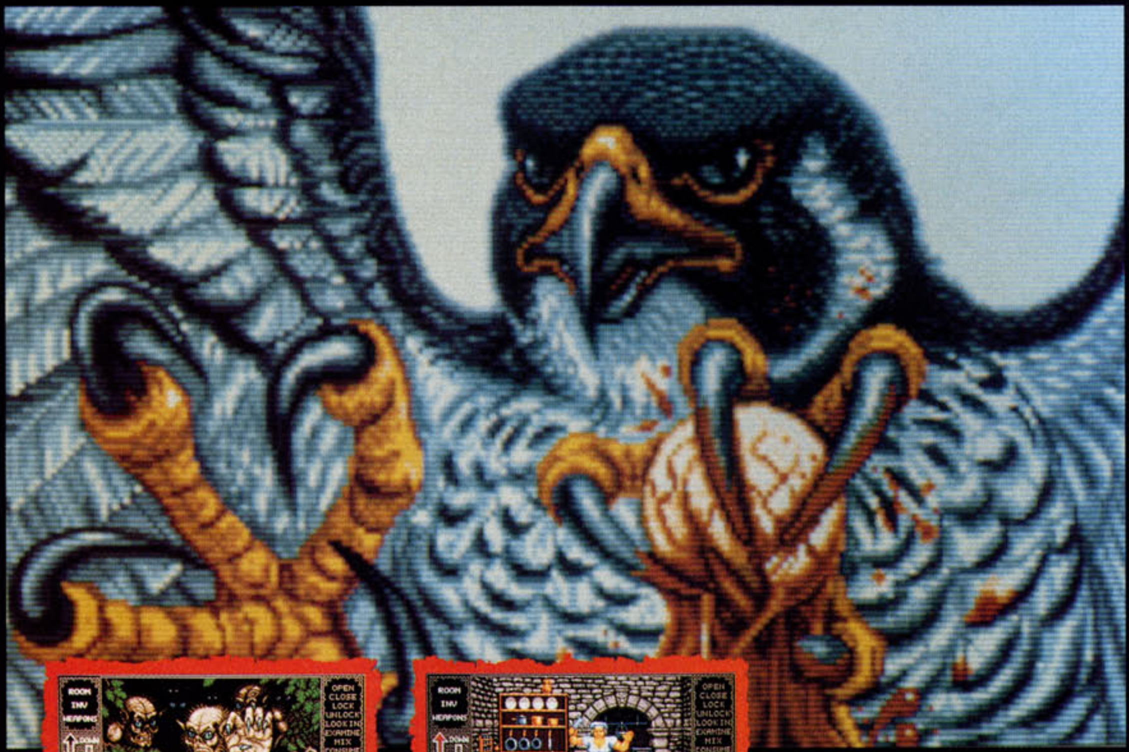
1) a critic should have some expertise (i.e. a solid background or well-researched approach to either the fiction or reality the game presents);
2) a critic must be aware of the intended audience (i.e. be willing to examine a work from more than one point of view);
3) a critic must know the medium (i.e. he should have some idea of the problems inherent in programming and marketing a computer game);
4) a critic needs a vision of the future (i.e. he must have some idea of where the art form is headed and where it *should* be headed;
5) a critic needs empathy with the creator (i.e. he needs to know what the designer was *trying* to accomplish and be aware of the developer's body of work); and
6) a critic needs to be willing to hear other voices (i.e. recognize that *his* word may not necessarily be the final word on a game).

Wilson closed with a favorite quotation from Oscar Wilde (*The Picture of Dorian Gray*), "When critics disagree, the artist is in accord with himself." Then, Sid Meier (*Pirates, Railroad Tycoon* and *F-15 Strike Eagle*) suggested a seventh tenet to Wilson's manifesto, "A critic should be entertaining." Judging from the lively response during the question and answer session, Wilson was either entertaining or controversial.

Developing Community

The design community took action at this year's conference to more formally align as an association of developers. Through the years, this conference has had an important impact on the computer game industry. We believe the new association will provide for even more effective cooperation in the future. **CGW**

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See Reader Input Device on page 90

The Categories

Strategy (ST): Games that emphasize strategic planning and problem-solving.

Simulation (SI): Games based on first-person perspectives of real-world environments.

Adventure (AD): Games that allow you to take an alter ego through a storyline or series of events.

Role-Playing Adventure (RP): Adventure games that are based on character development (usually involving attributes).

Wargames (WG): Simulations of historical or futuristic warfare from a command perspective.

Action/Arcade (AC): Computer games that emphasize hand-eye coordination and reflexes.

Games are often listed in more than one category. In this case, the first listed category is considered primary. In order to be recognized as the "Top Game" in a given category, a game must be listed as being primarily of that specific type.

Top Role-Playing



Top Simulation



THE TOP TEN GAMES

No.	Name	Source	Category	Avg. # Resp.	Rating
1.	*Wing Commander*	*Origin*	*AC,SI*	*89*	*10.69*
2.	*Railroad Tycoon*	*Microprose*	*ST*	*79*	*10.63*
3.	*Red Baron*	*Dynamix*	*SI*	*61*	*10.47*
4.	*Their Finest Hour*	*Lucasfilm*	*AC,SI*	*105*	*10.38*
5.	*Warlords*	*SSG*	*WG,ST*	*22*	*10.36*
6.	*SimCity*	*Maxis*	*ST,SI*	*126*	*9.61*
7.	*Harpoon*	*Three-Sixty*	*WG*	*74*	*9.49*
8.	*M-1 Tank Platoon*	*Microprose*	*SI,WG*	*72*	*9.43*
9.	*Ultima VI*	*Origin*	*RP*	*71*	*9.43*
10.	*Bane of the Cosmic Forge*	*Sir-Tech*	*RP*	*29*	*9.41*

No.	Name	Source	Category	Avg. # Resp.	Rating
11.	Silent Service II	Microprose	SI	55	9.26
12.	King's Quest V	Sierra	AD	51	9.25
13.	MechWarrior	Activision	ST	53	9.25
14.	Quest for Glory	Sierra	RP	22	9.23
15.	Command HQ	Microplay	ST	53	9.21
16.	Wings	CinemaWare	AC	32	9.15
17	Second Front	SSI	WG	38	9.14
18.	Populous	EA	ST	115	9.13
	Elvira	Accolade	AD	30	9.13
20.	Red Storm Rising	Microprose	SI	74	9.09
21.	Battlehawks 1942	LucasFilm	AC,SI	86	9.05
22.	Ultima V	Origin	RP	92	9.02
	Lords of Rising Sun	Cinemaware	AC,ST	50	9.02
24.	Wasteland	EA	RP	119	9.01
25.	Hero's Quest	Sierra	AD,RP	57	9.00
	Rise of the Dragon	Dynamix/Sierra	AD	37	9.00
27.	Space Quest III	Sierra	AD	34	8.97
	Sword of Aragon	SSI	WG,ST	45	8.97
29.	Quest for Glory II	Sierra	AD,RP	25	8.96
30.	Romance of the Three Kingdoms	Koei	ST,RP	31	8.96
31.	The Secret of Monkey Island	Lucasfilm	AD	31	8.96
32.	Overrun	SSI	WG	24	8.93
33.	Falcon	Spectrum Holobyte	SI	62	8.90
34.	Dragon Wars	Interplay	RP	30	8.87
	NFL Challenge	XOR Corporation	ST	86	8.87
	Starflight 2	Electronic Arts	RP	63	8.87
	Indianapolis 500	Electronic Arts	SI	32	8.87
38.	Power Monger	Electronic Arts	ST	33	8.83
39.	Might & Magic II	NewWorld	RP	43	8.81
40.	The Magic Candle	Mindcraft	RP	43	8.80
	LHX Attack Chopper	Electronic Arts	AC	25	8.80
42.	Project Stealth Ftr	MicProse	SI	29	8.79
43.	Bard's Tale III: Theif of Fate	Electronic Arts	RP	54	8.77
	Leisure Suit III	Sierra	AD	47	8.77
45.	Airborne Ranger	Microprose	AC	74	8.76
46.	Bandit Kings of Ancient China	Koei	ST,RP	28	8.75
47.	Jack Nicklaus Unlimited Golf	Accolade	ST	26	8.73
	Battles of Napoleon	SSI	WG	30	8.73
49.	Battlechess	Interplay	ST	62	8.72
50.	Action Stations	Conflict Analytics	WG	22	8.71
	Breach 2	Omnitrend	ST,RP	29	8.71
52.	Secret of the Silver Blades	SSI	RP	47	8.70
	Nuclear War	New World	ST	41	8.70
	Neuromancer	Interplay	AD	33	8.70
55.	F-15 Strike Eagle 2	Microprose	SI	58	8.69

THE HALL OF FAME

The Games in CGW's Hall of Fame Have Been Highly Rated by our Readers over Time. They are Worthy of Play by All.

Bard's Tale I
Chessmaster
Dungeon Master
Earl Weaver Baseball
Empire
F19 Stealth Fighter
Gettysburg
Gunship
Kampfgruppe
Mech Brigade
Might & Magic
M.U.L.E.
Pirates
Starflight
Ultima III
Ultima IV
War in Russia
Wizardry

No.	Name	Source	Category	Avg. # Resp.	Rating
56.	Typhoon of Steel	SSI	WG	43	8.67
	Curse of the Azure Bonds	SSI	RP	70	8.67
	Sword of the Samurai	MicProse	ST,RP	40	8.67
59.	Ishido	Accolade	ST	28	8.65
	Chessmaster 2100	Toolworks	ST	44	8.65
	Indiana Jones / Graphic Adventure	Lucasfilm	AD	29	8.65
	Ballistyx	Psygnosis	AC	20	8.65
	Zany Golf	Electronic Arts	AC	31	8.65
64.	Wayne Gretzky Hockey	Bethesda	AC,ST	36	8.62
65.	Pool of Radiance	SSI	RP	116	8.61
66.	Champions of Krynn	SSI	RP	65	8.60
	Shanghai II	Activision	ST	20	8.60
68.	King's Quest IV	Sierra	AD	58	8.59
69.	Buck Rogers	SSI	RP	39	8.57
70.	It Came From Desert	Cinemaware	AD	36	8.54
	Genghis Khan	Koei	ST,RP	34	8.54
72.	Future Wars	Interplay	AD	24	8.53
73.	Panzer Strike	SSI	WG	68	8.51
	Carrier Command	MicroPlay	AC,WG	49	8.51
	DeathTrack	Activision	AC	29	8.51
76.	Savage Empire	Origin	RP	37	8.48
77.	Manhunter 2	Sierra	AD	31	8.42
78.	Nobunaga's Ambition II	Koei	ST,RP	20	8.40
79.	TV Sports Football	Cinemaware	AC,ST	50	8.39
80.	Wings of Fury	Broderbund	AC	52	8.38
81.	Strike Fleet	Electronic Arts	WG	79	8.37
82.	Fire Brigade	Panther	WG	30	8.34
83.	Battletech: Revenge	Infocom	WG,RP	42	8.33
84.	Rocket Ranger	Cinemaware	AC,AD	75	8.32
85.	Nobunaga's Ambition	Koei	ST,RP	20	8.30
86.	Police Quest II	Sierra	AD	39	8.29
	Modem Wars	Electronic Arts	ST	24	8.29
	TV Sports Basketball	Cinemaware	AC,ST	33	8.29
89.	Drakkhen	Data East	RP	32	8.27
	688 Attack Sub	Electronic Arts	SI,ST	59	8.27
91.	Flight of the Intruder	Spectrum Holobyte	SI	25	8.26
92.	Manhunter	Sierra	AD	72	8.25
93.	Centurion	Electronic Arts	ST	49	8.24
94.	Police Quest	Sierra	AD	98	8.23
95.	Starglider II	Rainbird	AC	65	8.22
96.	Jack Nicklaus Greatest 18 Holes	Accolade	AC,ST	28	8.21
	Three Stooges	Cinemaware	AC	68	8.21
98.	Search for The King	Accolade	AD	20	8.20
99.	Leisure Suit Larry II	Sierra	AD	52	8.20
100.	Loom	Lucasfilm	AD	38	8.18

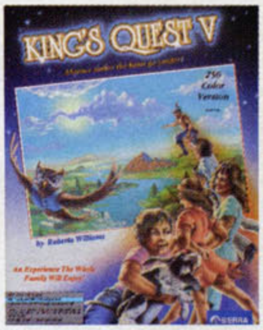
Top Strategy



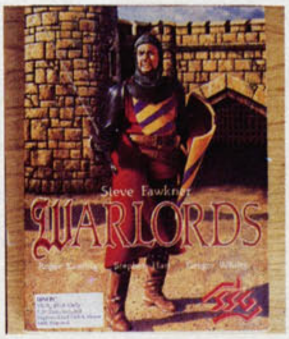
Top Action



Top Adventure

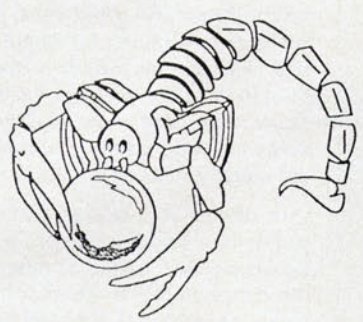


Top Wargame



Scorpion's View

Strategic Simulations' Eye of the Beholder





Scorpia is an experienced and respected adventure game expert. CGW is pleased to be able to provide this forum for her distinctive and, often, controversial perspective.

Once again, it's time to drag out the old crystal ball and see what appears in the depths. Looking through the veils I see... Hey, wait a minute! What's that big eye looking back at me???

Eye Of The Beholder (*EOB*), the first in a new series of **AD&D** games from **SSI**, is a complete departure from the standard gold box series in terms of: graphics, sound effects, interface, mode of play, puzzle orientation and combat.

The graphics are straight-on you-are-there 3-D perspective throughout the game, and they are quite beautiful. At least they are in VGA; I also looked briefly at EGA mode, and it was a *very* brief look. There's just no comparison — you really need VGA to get the most from the game's visual aspects.

This is an all-dungeon expedition; no towns, no wilderness. Nevertheless, *EOB* avoids visual boredom by giving different levels different representations: orange/brown bricks for the sewer levels, gray stone for the Dwarf country, dark red for Drow areas, mossy green in Thri-Kreen territory, and so on.

What really makes it work, however, what really gives you the *feeling* of being in an actual dungeon, is the remarkable and ingenious use of sound effects (best results are obtained with a sound card). Not merely creaking doors and dripping water, but insidious little noises which indicate that *something* is out there, and coming closer every second.

It's a creepy experience to be walking down a corridor, hearing a faint rustle or tramp of feet in the distance. Where is it coming from? The long passage ahead? That side branch? Or is it, perhaps, a deadly enemy sneaking up from behind?

Enhancing play further is the fact that each type of monster has its own "attack sound" to be made during combat. Few will forget the deep-throated "waow!" of the displacer beast, the chilling screech of the skeleton lords or the nerve-wracking chittering of the poisonous spiders.

Spells also have sounds and special effects associated with them, not all of which are easy to describe. Magic missiles go off with a bang, Create Food has a sort of twinkling sound, and Remove Paralysis is definitely eerie. Overall, the sound work in the game is top-notch.

So, just why *are* you in this dungeon, anyway? Need you ask? As usual, there are evil doings to be stopped and, as usual, you just volunteered for the dirty work. This time around, though, your party is a little smaller than you're accustomed to having it, at least initially.

Four is the number here, instead of the typical six of the gold box series. So, choose wisely. One profession you can do without is the thief. There is so little for a thief to do in this game (so few locks to pick) that having one is like dragging around useless baggage.

You will most definitely want a cleric, though. Not only do those healing spells come in handy, but the Create Food spell is a necessity. Little packages of

« *Circle Reader Service #55*

food are scattered around here and there, but they tend to become fewer as you go further down. Once your cleric reaches fifth level and has the Create Food spell, however, your food worries are over.

Fighters, of course, should also be in the group. Later in the game, you'll come across other warriors you can add, but you have to depend strictly on your own characters for the first few levels. So, a little muscle up front doesn't hurt.

It almost goes without saying you want a mage or two, as well. They don't have many spells at the start, and you'll have to do some hunting around to find more for them, but a magic missile or fireball at the right moment can be a lifesaver (and I don't mean candy).

Dual-class characters (fighter/magic-user, cleric/magic-user, etc), give you more for your money, although, as always, they advance slower than the pure classes. On the other hand, advancement isn't as critical here as it is in most other games of this type. Fifth level for spellcasters is what you want to reach, since that's where mages can use fireballs, and clerics have Create Food and Remove Paralysis. Anything beyond that is basically gravy.

I recommend using the Modify command at character creation time, especially in regard to dexterity. High dex means lower armor class, and, sorry to say, your crew won't be starting with much in the way of armor. It is strange (I have stronger words, too) to send a party into a known hell-hole when they are hardly wearing more than boots and skivvies. That's the way of it, however, so protect your characters as much as possible.

For all that, combat in this game is not excessive. This isn't your typical gold box hack'n'slash jaunt through myriads of encounters. While there is fighting enough to keep things lively, it doesn't become tedious, except perhaps on the Kenku level. The Kenku seem endless, usually appear in groups of three or four, and make your life miserable with their magic missiles.

I have a suspicion they were set up that way deliberately, to provide an area where hack'n'slash devotees could fight to their heart's content. On other levels, once you've cleaned the place out, encounters are very rare to non-existent. Then again, Kenku always carry food with them, so perhaps they're really meant as a food supply, although by the time you're ready for them, your cleric probably has Create Food anyway.

Whichever, do walk carefully when you're on Kenku turf.

Speaking of combat, those familiar only with the gold box games will have to adjust to a whole new way of fighting. Only the two characters in front can engage in hand-to-hand combat. Those in the rear must rely on spells and/or missile weapons. When those are used up, there isn't much they can do besides stand and watch the proceedings.

This can be irritating in the early stages of the game, when missile weapons (they all have to be found) and spells are few. Later on, your characters will have more than enough spells, spears, arrows, daggers and rocks to launch at hostile critters.

What is incredibly annoying, however, is the fact that you can't do anything about attacks from the rear or side. This is a definite weakness in the combat engine. It's ridiculous that people in the rear can be attacked without any means of fighting back.

Sometimes, there is room enough to maneuver your party around and away so that all monsters are in front. However, when monsters come from in front and behind when you're standing in a narrow corridor, there isn't much you can do except hope you can finish off one group before dealing with the other.

Maneuvering, by the way, is an important tactic in combat. Unlike the gold box games, you can move away from opponents without taking a shot in the back. So your party can sidestep to the left or right, or back up while fighting to gain room or put some distance between them and nasty critters like the spiders and rust monsters (best dealt with from a distance).

Spellcasting requires having the spellbook in hand, a requirement that is not part of the regular AD&D system. You only memorize spells from the books, you don't need to hold them. If you did, why would you need to memorize in the first place? This is especially detrimental to fighter/magic-users, who must either forego a shield (if they're in front), or spellcasting if they're using a bow. A better way of handling this is necessary.

In terms of plot, there isn't very much. This is your standard "Kill Foozle The Evil Wizard" story, where Foozle in this case happens to be a rather vicious Beholder. You progress through eleven levels of dungeon to have it out with Mr. Eyes in his fancy digs on the twelfth.

There is hardly any interaction with NPCs beyond fighting. In a few instances you can talk (or rather, listen) to someone, but your responses are limited to such simple things as "yes," "no," "attack," "leave," etc.

What sets *EOB* apart from most other games of this type is the extensive use of puzzles. It is meant to be a dungeon exploration game, which is why fighting is kept to a minimum. Most of the puzzles, though, are not too hard to figure out, once you get the hang of things.

You soon learn to pick up every object you come across, since it could be handy for holding down pressure plates on the floor (and other uses, as well). Walls are examined for disguised buttons that will open up further areas, or walked into, in case the wall is a false wall (the Drow favor false walls, and there are some in Dwarf country, although these are usually marked).

It's often not necessary to find every puzzle on every level to progress through the game. Some lead to other areas of the dungeon, while others will reveal weapons, armor or magical items. The only puzzles not easy to find/solve are those involved with the Beholder Bonus contest.

Each of the twelve levels has a special hidden puzzle (except level four, where the bonus is right there in the open and impossible to miss). These puzzles are additions, and don't have anything to do with getting on in the game itself; you can easily complete your mission without solving a single bonus puzzle.

The interface is built for mouse use, although the keyboard can be used if you don't have a mouse. Everything is point-and-click; you position the cursor on an item to pick it up, drop it, throw it or use it in combat. Movement is accomplished by clicking on one of several arrow icons to go forward, backward, sideways or turn around. In some tense combats, however, it is better to have one hand on the keypad for movement, and the mouse on the character icons for fighting/spellcasting.

Items dropped or used in combat don't disappear; they stick around to be picked up later if you want them back. This is handy for missile weapons, since they can be used over and over again. The only drawback is that, after a fight, you have to pick each one up individually.

Mapping is a necessity beyond the first three levels (a map of those comes with the game), particularly in the Drow

areas. After going upstairs, downstairs, into pits and through portals, your exact location is often in doubt. Good maps can help to reduce or eliminate confusion, as well as point up areas where you might want to search for secret doors or walls.

For all its polish, however, *Eye Of The Beholder* has some ragged edges. The first is in booting up the game: *every* time you run it, you must specify what graphics you want, which sound card, and whether or not you want to use your mouse.

This is plain silly. A configuration file should be created (just as they do with the gold box games) on first boot that has this information in it for subsequent play.

Spellcasting, especially in real time, is a bit awkward. First you have to click on the spellbook, then on the spell level you want, and finally on the spell itself. That's three moves to get off a spell, which is certainly too much, particularly when you can only handle one character at a time. No one else in the party can do anything while you flip through the book and get off the spell, while the monsters don't have that problem. They just keep bashing away at your front line.

There is only one save position. It is difficult to understand why a game that sports so many puzzles, requiring a lot of experimentation, allows for only one save. This forces you to exit the game and copy the relevant save files to a backup from time to time, simply to be on the safe side. That should not be necessary; multiple save positions should be incorporated in the game.

Worst by far, though, is the ending. Not since *Sentinel Worlds I* has any CRPG had so abrupt and unrewarding a finish. You kill the Beholder. You get a text box of congratulations. You are dropped out of the program to DOS. End of game.

This is outrageous! **SSI** is already hearing about it from other players, and with good reason. There is no justification for such a cheap ending. They claim another disk would have been necessary to put in a "real" ending. If that's the case, put in the extra disk. Or else, whittle down the fancy beginning. That isn't nearly as important as a *reward* at the end of the game. No player enjoys slogging through a dungeon, winning the big battle and then receiving a slap in the face for all his/her efforts.

Despite all that, as a first-time effort with a new engine, *EOB* has a lot going for it, especially in the graphics/sound department. No other game I've played to date has ever given me such a sense of really being in a dungeon and that alone is worth the price of admission.

The interface is simple and fairly intuitive (a good thing, as the manual is poorly designed and put together). Copy protection is practically nil; only twice during the entire game was I ever asked to enter a word from the manual.

So, the bells and whistles are fairly well-established. Work needs to be done in the combat areas, plot has to be developed, more interaction with NPCs is needed, and certainly better endings must be constructed. If that can be accomplished (and there's no reason why not), the Legend series will become one of the leaders in the CRPG field. **cgw**

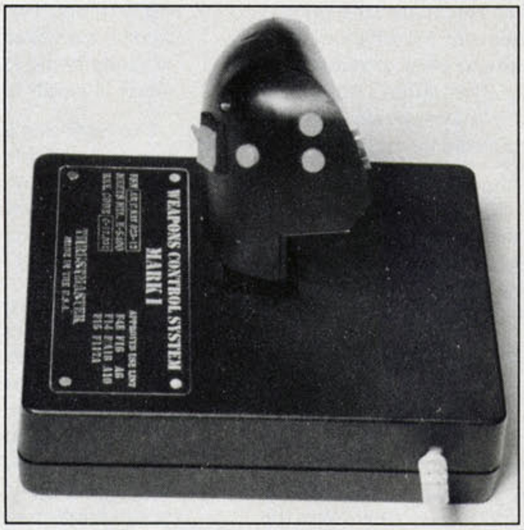




Getting Under Control

The "Thrustmaster" Control System

by Scott West



Switch	Function	Function	Function
1	Zoom out	Zoom in	Flares
2	Map/radar	Map/radar	Chaff
3	HUD modes	HUD modes	HUD modes
4	Bay doors	Bay doors	Bay doors
5	Weapons select	Weapons select	Weapons select
6	no op	no op	no op
7a	On (Nav mode 1)		
7b		On (Nav mode 2)	
7c			On (Attack mode)

Product:	Thrustmaster, Mark 1 Weapons Control System
Use:	Accessory for IBM Air Combat Simulators
Price:	$99.95
Designer:	Bob Carter Thrustmaster, Inc. Oswego, OR

One of the greatest frustrations that many computer pilots experience is the proliferation of keyboard combinations necessary to access weapon systems and electronic countermeasures. Sometimes the player gets the idea he's working with a typing tutorial instead of a flight simulation. With the latest generation of air combat simulators boasting more complex features than their predecessors, the problem seems to be getting more acute. For example, a player flies his enemy into the proper weapons firing perimeter and reaches for the keyboard to hit the proper keys necessary to lock his radar on his opponent. While flying his aircraft with his right hand, he reaches down with his left, hits the wrong key and either spends time away from the screen looking for the right key or, possibly worse, invokes another view. This can mean the difference between winning and losing a dogfight. Thus, one's potential success at winning dogfights increases or decreases in direct proportion to one's proficiency in typing.

Since, however, these simulations are modeling real aircraft and real fighter pilots don't use keyboards, it seems clear that a device is needed to replace the keyboard. With this in mind, the Thrustmaster was created as a HOTAS (Hands on Throttle and Stick) device which provides the computer pilot with an independent throttle, a three position rocker switch and six push-button toggles.

The Thrustmaster is not a joystick, but rather a small keyboard (it utilizes a keyboard PROM chip). It is only capable of output, however, and is not user-programmable. It plugs into the keyboard input on one's computer and then one plugs the keyboard directly into the Thrustmaster. The computer fighter pilot selects a pre-set configuration from one of the DIP switch settings. Although more suited for modern jet combat simulations, it can also be used for flying in WWI and II aircraft by experimenting with these settings.

The throttle is comprised of an ergonomically designed handle that fits in one's hand. All buttons are within easy grasp of one's fingers. The throttle has a detent, so that the pilot may infer his throttle setting by feel alone, without having to look down to find the appropriate key on the keyboard.

There is a three-position rocker switch positioned on the back of the throttle which can be manipulated with the heel of one's hand. Depending upon which simulator is being flown, it can serve different functions. For instance, in **Spectrum Holobyte**'s *Flight of the Intruder*, the rocker switch controls the landing gear in both the F-4 and the A-6. However, in **MicroProse**'s *F-15 Strike Eagle II*, the same button controls the cycling of air-to-air and air-to-ground weapons.

The six toggle buttons are strategically placed to be effortlessly pressed by one's fingers and thumb. They control such functions as the dispensing of chaff and flares or the extending of one's air brake. It depends upon which DIP switch setting the Thrustmaster is set up for.

Following is a list of the simulations which are already compatible with the Thrustmaster:
MicroProse: *F-15 Strike Eagle II, F-19 Stealth Fighter*
Spectrum Holobyte: *Flight of the Intruder, Falcon AT*
Dynamix: *A-10 Tank Killer*
Lucasfilm: *Their Finest Hour, Battlehawks 1942*
Velocity: *Jetfighter*
Although Thrustmaster is designed for air combat simulators depicting jet aircraft, one can use it as a throttle for **Dynamix**'s *Red Baron* by utilizing the same DIP switch setting as *A-10 Tank Killer*. The same setting works for MicroProse's *Knights of the Sky*.

The table above illustrates the various functions that the Thrustmaster can control when one uses it to fly MicroProse's *F-19 Stealth Fighter*:

The Thrustmaster will soon support *Falcon 3.0*, although this will require a replacement PROM chip. Also, coming soon is the Mark 1 flight control system. It is a replica of the F-15 joystick, complete with 5 buttons and 7 functions. Current air combat simulators can only process the information from two-button joysticks. Hopefully more developers will see these innovative new products and will support them in the near future.

One word of warning may be necessary, however. Players who absentmindedly play with the Thrustmaster when a program *other* than a flight simulator is being accessed may be in for a nasty surprise. For example, moving the Thrustmaster unnecessarily can change Microsoft *Excel* into an unwanted "adventure game" (with absolutely *no* documentation) in seconds. **CGW**



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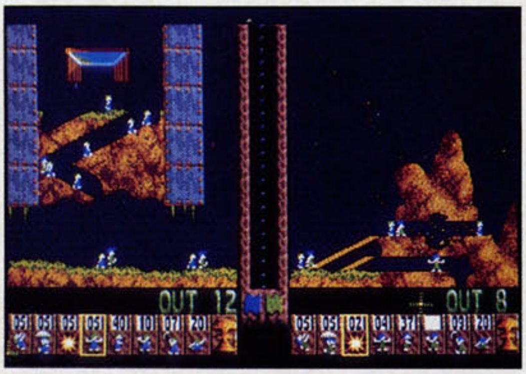
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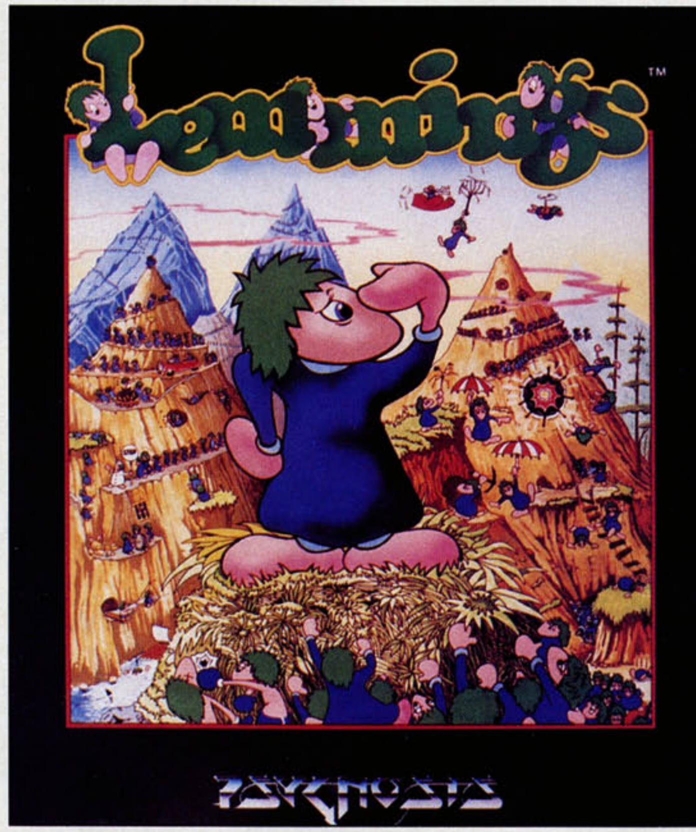
Another Leap Forward

Psygnosis' Lemmings

by Allen L. Greenberg

TITLE:	Lemmings
SYSTEMS:	Amiga, Atari ST, IBM
# PLAYERS:	1-2 (IBM, solitaire only)
PRICE:	$49.99
PUBLISHER:	Psygnosis Liverpool, England





The name "lemming" refers to any one of a number of small, arctic rodents, several European species of which have become widely romanticized for their aptitude to engage in a mass migration which frequently terminates at a nearby ocean and in a watery death for the community. Having recently seen an entire country engage in a holy war to achieve much the same results, is it any wonder we humans feel some fascination with these cute, furry and largely inept animals?

Lemmings is also the name of a new addiction (aka "game") from **Psygnosis**. The challenge is for a human player to subtly intervene in lemming affairs, thereby guiding them to safety and saving them from extinction. This may well be the best offering to date from **Psygnosis**, and it certainly is worth lining up in the fashion of the game's title characters to obtain a copy.

Lord of the Lemmings

Those who enjoyed the brief glimpse of godhood afforded in the playing of **Electronic Arts**' *Populous* will be treated to yet another "divine" experience in *Lemmings*, albeit with a far less dignified group of (devout) followers. As the exercise begins, a community of lemmings, appearing more like creations of Dr. Seuss than actual rodents, plummet one at a time from a trap door onto a two-dimensional playing field. Immediately, the lovable Lilliputian herd begins to walk across the screen until it reaches a barrier which forces it to reverse its direction. Should the creatures encounter a more deadly situation, such as the edge of a cliff, an ocean or a raging fire, they will casually proceed to their deaths with only a brief cry to mark their passing. The session ends when the last lemming is gone, or, more desirably, when the population has been guided to the exit door by the player's "divine intervention."

The Right Lemming for the Job

For the community to survive the migration, the player must carefully assign abilities to certain members of the group. A lemming who becomes a "blocker" prevents his comrades from moving past a certain point. Other lemmings may become "floaters" who are able to survive long-distance drops by the judicious use of an umbrella. "Climbers" are able to shinny up any object or terrain, while "diggers" and "miners" are able to drill beneath most surfaces. "Bridge-builders" perform the task for which they are named and "bashers" can remove anything from tree-stumps to entire mountains. Finally, *any* lemming can be rigged for self-destruction. The resulting explosion may remove barriers, but may also prove a traumatic experience as the small creature turns to the player, shrieks in a high-pitched silicon-accented "Oh no!" and disappears in a haze of confetti.

Of Mice and Lemmings

The player interacts with the lemming population using their distant techno-relative, the mouse. IBM users may, instead, use the keyboard. The animals are given their assignments by first clicking on one of the icons which line the bottom of the screen and

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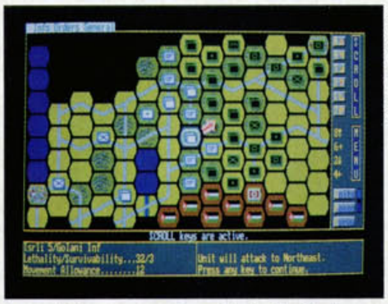
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then clicking on a particular lemming. Each icon and its corresponding ability may only be used a limited number of times. Split-second timing is important because the creatures have no capacity for independent judgment and all decisions must be made for them at the right instant.

Players may choose from one of four categories of play: "fun," "tricky," "taxing" or "mayhem." Each category contains 30 different levels of play arranged in ascending complexity which the player must complete in order to move onto the next level. After successfully completing a level, the player is given a password which will allow him to return to that level without first replaying the earlier exercises at future sessions. The "fun" level is actually a slow-paced tutorial which allows the player to become familiar with game play and develop strategies for the remaining 90 levels. The Amiga and Atari versions also feature a two-player mode for which two mice are necessary. In this mode, each player has a separate view of the same play field and must attempt to seduce as many lemmings as possible away from his opponent.

Eyes and Ears for Lemmings

The usual assault of sounds and graphics made on the senses by **Psygnosis** programs is present in *Lemmings*, although these may be a little more subdued in some cases. The sound effects are plentiful, realistic and quite useful for keeping track of the creatures. Players who have stereo speakers connected to their systems will be able to approximate the position of the source of a sound based upon which speaker it is heard from. The player has the option of doing without some of these sound effects in order to hear some appropriately traditional (nerdy, actually) music.

The screen conveys less of the lush background detail in *Lemmings* than one may be used to seeing in other **Psygnosis** offerings. However, what is present is displayed with that company's "standard-setting" color, animation and realism. The only difficulty which some players may have is with the lemmings themselves. They are simply so tiny on the screen as to cause occasional frustration in following them.

Each sequence in *Lemmings* generally takes place across several horizontally scrolling screens. The scrolling is completely under control of the player, who will need to follow the action in more than one place at a time. This control is further enhanced by the presence of a small "radar" window which not only displays the movements of the lemmings across the entire playing area, but also allows the player to instantly jump to any spot by clicking on it in the radar screen. It's a well-conceived system and it works nicely.

Where Lemmings Go, Fun Follows

Recreational computing may well be the last safe outpost wherein a company may claim to have an "addicting" product and not find themselves in danger of attack by a lynch mob. Not since *Tetris* has this reviewer been so addicted to, or completely fascinated with, a series of challenging puzzles. For those who enjoy fast-moving jousts of logic and creativity, follow the crowd and get *Lemmings*. **cgw**

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BON Scenario Disk 1	25	25	25	-	-
BON Scenario Disk 2	25	25	25	-	-
Both Disks 1 & 2	45	45	45	-	-
Battles of Napoleon	32	32	32	-	-

Scenario Disks 1 & 2 for Battles of Napoleon

1. Maida, Austerlitz, Utitsa, Marengo, Redoubt
2. Albuera, Medellin, Santon, New Orleans, Bridge

GAME SELECTION	APPLE	C64	IBM	ST	AMIGA
Strategic Simulations:					
Death Knights of Krynn	-	-	34cx	-	-
Medieval Lords	-	40c	-	-	-
Countdown to Doomsday	-	28	34x	-	34
Renegade Legion Interceptor	-	-	40x	-	-
Eye of the Beholder	-	-	34ax	-	-
Champions of Krynn	34	28	34x	-	34
Curse of Azure Bonds	34	28	34x	40	34
Pool of Radiance	31	28	34x	-	34
War of the Lance	28	28	34x	-	-
Secret Silver Blades	-	28	34x	-	-
Hillsfar	-	28	34x	34	34
Dragon Strike	-	28	34x	-	34
Sword of Aragon	-	-	28x	-	34
DM Assist. Vol. 1	22	22	22	-	22
DM Assist. Vol. 2	22	16	16	-	16
Wargame Construction Set	-	-	-	-	28
Battles of Napoleon	32	32	32	-	-
Storm Across Europe	-	40	40	40b	40
Second Front	-	-	40	-	34
Gettysburg	16	16	40	-	16
Waterloo	-	-	40	40	40
Kampfgruppe	16	16	40	-	16
Overrun	-	-	-	-	40
Typhoon of Steel	-	-	40x	-	40b
Civil War	-	-	40c	-	40c
Strategic Studies Group:					
American Civil War I	28	28	28	-	-
American Civil War II	28	28	28	-	-
American Civil War III	28	28	28	-	-
Halls of Montezuma	28	28	28	28a	28
MacArthur's War	28	28	28a	-	28
Panzer Battles	28	28	28	-	-
Reach for the Stars	28	28	28	-	28
Rommel's Battles	28	28	28	-	-
Russia, the Great War	28	28	-	-	-
Gold of the Americas	-	-	28	28	28
Fire King	-	28	28	-	-
Battlefront	28	28	-	-	-
Battles in Normandy	28	28	-	-	-
Carriers at War	28	28	28d	-	-
Europe Ablaze	28	28	-	-	-
Warlords	-	-	32	-	32
Electronic Arts:					
Andretti's Racing Challenge	-	-	34cx	-	-
Bards Tale II	16	13	21x	-	16
Bards Tale III	13	13	34x	-	34c
Escape From Hell	-	-	34x	-	-
F-16 Combat Pilot	-	25	13x	16	16
Populous	-	-	34x	34	34
Populous Data Disk	-	-	13	-	-
Powerdrome	-	-	13	16	16
Starflight	-	28	19x	34	34
Starflight II	-	-	34x	-	-
Yeager's Advanced Flight	-	13	20x	-	28b
688 Attack Sub	-	-	23x	-	34
Budokan	-	-	34x	-	28
Centurian Defender Rome	-	-	34x	-	-
LHX Attack Chopper	-	-	40x	-	-
Hard Nova	-	-	34x	-	-
Fountain of Dreams	-	-	34x	-	-
Stormovik: Su-25 Soviet Att.	-	-	34x	-	-
Madden Football	34	28	34x	-	-

GAME SELECTION	APPLE	C64	IBM	ST	AMIGA
Microprose:					
Railroad Tycoon	-	-	36x	-	-
Silent Service II	-	-	34x	-	-
Sword of the Samurai	-	-	34x	-	-
M1 Tank Platoon	-	-	40x	-	34
F-15 Strike Eagle II	-	-	34x	-	-
Red Storm Rising	-	28	34x	27	22
F-19 Stealth Fighter	-	28	40x	-	-
Airborne Ranger	-	25	27x	-	30
Pirates	31	27	27x	27	31
Gunship	-	25	32x	34	34
Carrier Command	-	23	20x	27	-
Space 1889	-	-	31x	-	-
X-Men II	-	-	25x	-	-
Knights of the Sky	-	-	36x	-	-
Lightspeed	-	-	36x	-	-
Covert Action	-	-	34x	-	-
Command HQ	-	-	36x	-	-
UMS II	-	-	39ax	-	41a
Marvel Trilogy	-	25	30	-	-
Spellcasting 101	-	-	34x	-	-
Starglider II	-	23	18x	27	-
Destroyer Escort	-	20	-	-	-
Midwinter	-	-	30x	-	28
Three Sixty:					
Harpoon	-	-	39x	-	39
Harpoon Battle Set 2	-	-	22	-	22
Harpoon Battle Set 3	-	-	22	-	22
Harpoon Scenario Editor	-	-	28	-	28a
Blue Max	-	-	34x	-	34a
Das Boot Submarine	-	-	34x	-	34a
Mega Fortress	-	-	40cx	-	40c
Armor Alley	-	-	28c	-	-
Sands of Fire	-	-	31	-	-
Origin:					
Ultima IV	-	35	35	-	36
Ultima V	-	35	35	35	40
Ultima VI	-	35	40	-	-
Ultima Trilogy	-	35	35	-	-
Knights of Legend	34	30	30	-	-
Wing Commander	-	-	40x	-	-
Wing Commander: Secret Missions	-	-	19	-	-
Savage Empire	-	-	34	-	-
Omega	34	30	30	34	32
Space Rogue	34	30	30	34	32
Sierra:					
Codename: Iceman	-	-	36	36	40
Colonel's Bequest	-	-	36	36	40
Conquest of Camelot	-	-	36	36	40
Quest for Glory II	-	-	-	40	40
Socerian	-	-	36	40	-
A-10 Tank Killer	-	-	33	-	30
Kings Quest IV	34	-	36	36	36
Kings Quest V	-	-	36	-	39
Space Quest III	-	-	36	36	36
Space Quest IV	-	-	39	-	39
General Quarters:					
Battle of Austerlitz	-	-	30	-	-
Banzai	28	-	28	-	-
Battle Stations	28	-	28	-	-
Action in North Atlantic	28	-	28	-	-
German Raider Atlantis	28	-	28	-	-
Action Off River Plate	28	-	28	-	-
War at Sea	28	-	28	-	-
Prelude to Jutland	28	-	28	-	-
War in the Falklands	28	-	28	-	-
Warship That Changed History	28	-	28	-	-
Battleship Bismark	28	-	28	-	-
The Rising Sun	28	-	28	-	-
Midway	28	-	28	-	-
Marianas Turkey Shoot	28	-	28	-	-
Air Raid Pearl Harbor	28	-	28	-	-
Mare Nostrum	28	-	28	-	-
Return to the Falklands	28	-	28	-	-

GAME SELECTION	APPLE	C64	IBM	ST	AMIGA
New World Computing:					
King's Bounty	28	28	34x	-	28
Might and Magic II	34	28	34x	-	28
Nuclear War	-	-	34x	-	-
Tunnels and Trolls	-	-	34x	-	-
Lucasfilm:					
Battlehawks 1942	-	-	22x	-	-
Loom	-	-	39x	39	39
Their Finest Hour	-	-	39x	39	39
Ind. Jones Last Crusade:					
Action Game	-	19	19	-	-
Graphic Adventure	-	-	22x	-	22
Night Shift	-	22a	28x	28a	- 28a
Secret Monkey Island	-	-	39x	-	-
Secret Weapons Luftwaffe	-	-	40bx	-	-
Interstel:					
D.R.A.G.O.N. Force	-	28c	34	-	34
Empire	28	28	34x	-	34
Star Fleet II	-	-	39	-	-
Earthrise	-	-	34	-	-
Koei:					
Nobunaga's Ambition	-	-	38x	-	38
Nobunaga's Ambition II	-	-	38x	-	38
Romance of 3 Kingdoms	-	-	42x	-	42
Romance of 3 Kingdoms II	-	-	42cx	-	-
Genghis Khan	-	-	38x	-	38
Bandit Kings	-	-	38x	-	38

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Shiloh: Grant's Trial	12	12	-	-	-
Sons of Liberty	16	16	-	-	-
Questron II	16	16	16x	16	16
Phantasie III	16	16	16	16	16
Stellar Crusade	-	-	16x	16	16
Panzer Strike	16	16	-	-	-
DM Assist Vol. 2	-	16	16	-	16
Dragons of Flame	-	16	16x	16	16
Heroes of the Lance	-	16	16x	16	16
Red Lightning	-	-	16	16	16
First Over Germany	-	16	16	-	-
Gettysburg	16	16	-	-	16
Kampfgruppe	16	16	-	-	16
Microprose:					
Silent Service I	20	20	20x	20	20
F-15 Strike Eagle I	20	20	20x	20	-
Electronic Arts:					
Bard's Tale I	13	13	13	16	16
Bard's Tale II	16	13	-	-	16
Bard's Tale III	13	13	-	-	-
Might and Magic I	20	20	20x	-	-
Legacy of Ancients	10	10	10	-	-
Marble Madness	13	13	13	16	16
PHM Pegasus	10	10	-	-	-
Strike Fleet	13	13	13	-	-
Wasteland	13	13	13	-	-
Music Construction Set	13	13	13	16	-
Demon Stalkers	-	10	-	-	-
Patton vs. Rommel	-	13	13	-	-
Skyfox	-	10	-	-	-
Skyfox II	-	10	-	-	-
Zany Golf	-	-	13	16	16
Skate or Die	-	13	13	-	-
Ski or Die	-	13	13	-	-
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Pipe Dream	20	-	20x	-	-
Sentinel Worlds I	-	13	13x	-	-
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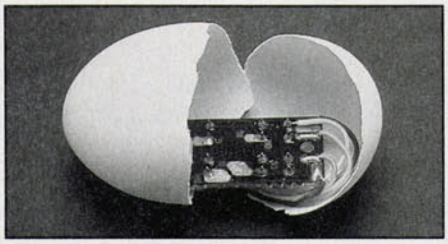
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Inside the Industry



Sierra/Broderbund Merger Off

Merger talks between publicly-held **Sierra On-Line** and privately-held **Broderbund Software** were terminated on March 27, 1991. Directors of both companies apparently reached a realization that certain key understandings regarding the consolidation of two distinct upper management tiers were not likely to be forthcoming. As **Sierra** CEO Ken Williams remarked in an interview with *CGW*, one goal of combining two companies is to increase efficiency according to a new economy of scale. Maintaining two distinct management structures would have reduced that efficiency, yet streamlining the organization would inevitably have meant that individuals who had invested their careers in one or the other of the corporations would feasibly be transferred, demoted or laid off. Williams sympathetically observed that corporate growth becomes secondary when people are considered.

Both companies expressed the highest regard for their intended merger partners, in spite of the decision to end the talks. **Broderbund** President Ed Auer stated, "We have the highest regard for **Sierra**, their products and their people. We still think it would have been a great strategic fit and regret that the merger was not possible."

Ken Williams used more informal language to convey the same point, "Both companies were doing so well and having so much fun that we looked at the work that it would have taken to put the companies together and decided that it wasn't best."

Even the competition was disappointed with the unraveling of the merger talks. Although the merger would have created a company that would have made **Electronic Arts** the *second largest* entertainment software publisher in terms of gross sales, **EA** Vice-President Bing Gordon suggested, "It's too bad, because if the two companies had been able to agree on the merger, it would have created another strong American-based software company. All things considered, I would rather have seen them successfully merge than not. We admire both companies and the people involved."

The net result of the decision to end merger talks is that both **Broderbund** CEO Doug Carlston and **Sierra** CEO Ken Williams believe that this is the "last dance" between their two companies and they do not expect to entertain merger considerations again. Williams *did* stipulate to *CGW* that **Sierra** will continue to investigate possible acquisitions among software publishers that fit the **Sierra** formula (i.e. aggressive, efficiently-run companies with a commitment to technological innovation in their product lines).

Game Developer Awards Unveiled

At the **Computer Game Developers' Conference**, held March 9-12, 1991 in the San Jose Hyatt, the designers honored distinguished products for the first time. In the past, the CGDC has only honored software publishers and individuals. Now, the design community is becoming more of an "academy" of working professionals in their handling of awards. Bruce Sterling, whose name is almost synonymous with the cyberpunk genre (of dark futures where technology has been put to nefarious social and anti-social uses — much as drug use was formative for much of the counter-culture in the '60s), gave a stirring address as the keynote speaker. Sterling urged designers to entertain "dangerous" thoughts and celebrate their weirdness, nerditude and geekdom. He even placed the awards ceremony itself into an interesting perspective by observing that whereas most art forms look to the past for their "classics," computer game designers refer to the games which are still in the future as their classics. He observed that because the platforms on which we play and view computer games become obsolete, we really cannot have the kind of historical reference that a filmmaker or author can have. Sterling's point was underscored by the fact that *Star Raiders*, a classic Atari game, was nominated for Best Technical Achievement. Many of the young designers did not know what the game was.

Winners of the first Computer Game Developer Awards devoted to product were: **Best Gameplay:** *The Secret of Monkey Island* (Ron Gilbert, designer); **Best Interface:** *Loom* (Brian Moriarty, designer); **Best Graphics:** *Wing Commander* (Chris Roberts, designer); **Best Audio:** *Wing Commander* (George Alec Sanger and Dave Govett, composers); **Most Socially Responsible:** *SimEarth* (Fred Haslam and Will Wright, designers); **Most Innovative:** *SimCity* (Will Wright) and **Best Technical Achievement:** *Wing Commander* (Chris Roberts, designer). The only individual award presented was **Best Producer**. This year, Greg Hammond of **Lucasfilm Games** was honored with this award.

New British Company Establishes Software Beachhead

RAW Entertainment (the acronym stands for role-playing, adventure and war games) is a British company that is moving into the American market with a unique strategy. Initially, according to the company's marketing director, John Ingram, the company will publish computer games from small U.S. companies which did not get the market penetration they deserved. **RAW Entertainment** will release **Conflict Analytics**' *Action Stations* (currently undergoing new programming with the original designer, Alan Zimm, as consultant); **Lyric Software**'s *Worlds At War*; and **Command Simulations**' *Blitzkrieg in the Ardennes*, *White Death* and *Suez '73* (currently in the final stages of production).

Next, the company plans to develop some original titles. The first title expected to be developed in-house will be *Space, Inc.*. Two NASA employees used their colleagues as consultants and created simulation aspects to reflect a "best guess" aspect of how space travel would work in 100 years. The goal is to create a game that would be science "fact"ion rather than science fiction.

The company currently employs about 25 programmers working in the U.S. on various projects. According to Ingram, "The goal is to be very different from the rest, yet adopting some of the methods of the best. We admire **Sierra**'s customer service, **MicroProse**'s documentation and **Lucasfilm**'s products. That's what we intend to emulate." **CGW**



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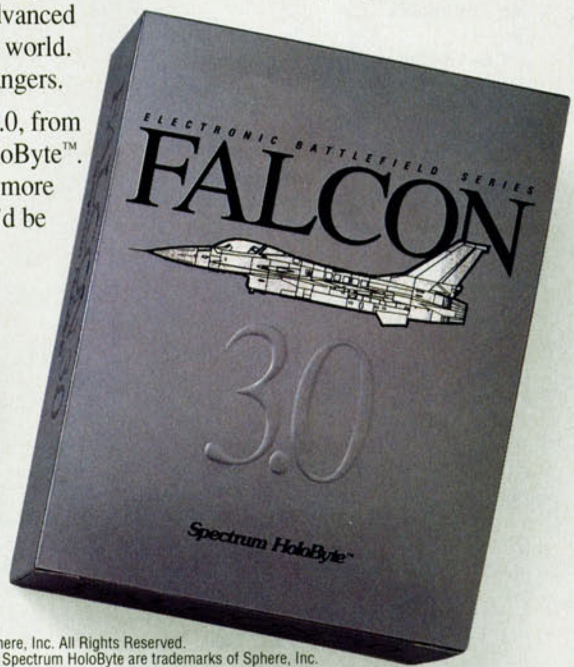
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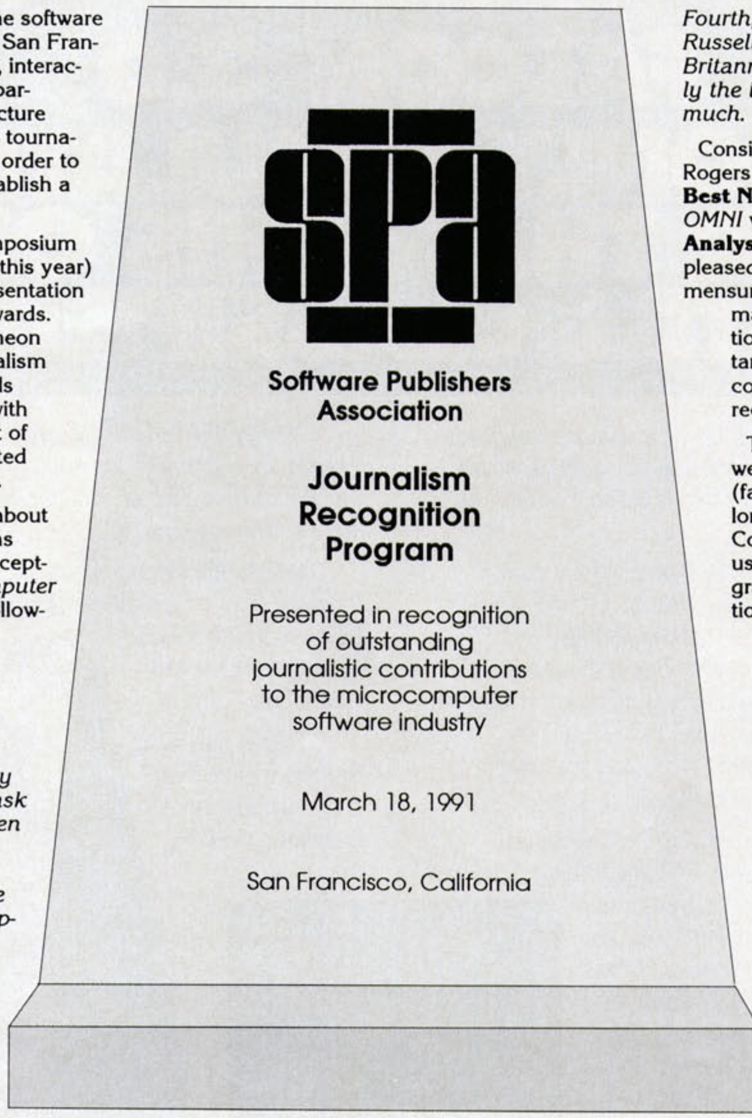
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Celebrating Software

The 1991 Spring Symposium of the Software Publishers Association



In March, representatives of the software industry gathered together in San Francisco, California for reflection, interaction and celebration. Attendees participated in panel discussions, lecture presentations, workshops, tennis tournaments and award ceremonies in order to evaluate the recent past and establish a prognosis for the future.

The highlight of the spring symposium for many of the attendees, and (this year) especially for *CGW*, was the presentation of the Excellence in Software Awards. Presentations began with a luncheon where the Critics' Choice, Journalism and Lifetime Achievement awards were presented and concluded with an evening banquet, reminiscent of the "Academy Awards" and hosted by comedienne Rosie O'Donnell.

CGW was particularly excited about the selection of Johnny Wilson as **Best Software Reviewer**. In accepting the award, the editor of *Computer Gaming World* expressed the following sentiments.

It is a privilege to accept this award, not only on behalf of myself, but on behalf of computer game reviewers everywhere who do not usually get much respect. Some may ask how you can have respect when you only cover games, but at Computer Gaming World, *we think games are important. We think of "play" as being risk options management with non-lethal consequences for children. We think of computer games as performing something of the same function for adults.*

I stepped into a tradition of taking computer games seriously at CGW. *Our founder and publisher, Russell Sipe, had a vision for the magazine and drew it in bold black lines. My colleagues and I have had the privilege of coloring that vision in. As a journalist in this field, there have been five high points. In chronological order, they begin with the beautiful and efficient public relations person from a major publisher that called and asked me to share with her what she should, but didn't, know about her company that day. Second, there was the vice-president of development of an entertainment software publisher that responded to a probing question about an unannounced and eventually cancelled product by stating, "I hate you, Johnny Wilson." Third, was when we had to fold* Computer Game Forum [Publisher: Which Wilson edited] *into* Computer Gaming World *in order to publish twelve times per year and Russell said that he would be proud to have any features from* CGF *in* CGW. *Fourth, was when Lord British inducted Russell and myself into the Knights of Britannia. And fifth, this award is simply the icing on the cake. Thank you* very much.

Considering, in particular, that Michael Rogers of *Newsweek* won the award for **Best News Reporting** and Keith Ferrell of *OMNI* won the honors for **Best Industry Analysis/Editorial**, *CGW* is expressly pleased to have received an award commensurate with writers published in magazines with much higher circulations. As Wilson noted in his acceptance speech, it is significant for a computer *game* reviewer to have received this honor.

The **Lifetime Achievement Award** went to "The Woz," Steve Wozniak (father of the Apple). It has been a long journey from the "HomeBrew Computer Club" and all of us who use personal computers are expressly grateful for the vision and determination of pioneers like Steve.

The **Critics' Choice Awards** were voted on by members of the press, including *CGW* publisher Russell Sipe, who co-presented the **Best Consumer Program** with *Compute*'s Peter Scisco. *GeoWorks Ensemble*, a graphic user interface, won **Best Consumer Program**. *Microsoft Windows 3.0* was selected **Best Business Program** and *Compton's Multimedia Encyclopedia* won the honors as **Best Education Program**.

During the evening festivities, Roberta Williams of **Sierra** and Jeff Braun of **Maxis** accepted two awards each. Roberta was honored for **Best Early Education Program** for the multimedia version of *Mixed-Up Mother Goose* and for **Best Fantasy Role-Playing/Adventure Program** with *King's Quest V*. The latter won over impressive competition with **Access Software**'s *Countdown*, **Interplay Productions**' *Lord of the Rings: Volume 1*, **Lucasfilm Games**' *The Secret of Monkey Island* and **Origin Systems**' *Ultima VI: The False Prophet* as nominees for the award.

Maxis Software managed to garner two awards for *SimEarth*. Not only was *Sim-*

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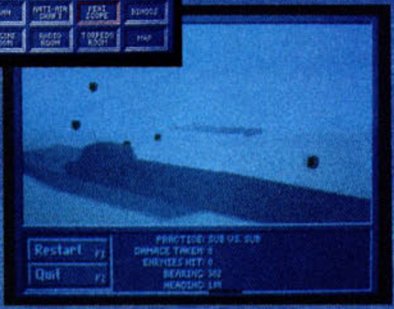
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Earth selected as **Best Secondary Education Program**, but also as **Best Simulation Program**. Other nominees in the latter category were: **Accolade**'s *Test Drive III: The Passion*, **Broderbund**'s *Stunts*, **Strategic Simulations**' *DragonStrike* and **Origin**'s *Wing Commander. [Ed: When the **Best Action/Arcade Program** nominees were printed,* CGW *had wondered why* Wing Commander *was not included. At the SPA meeting, we were told that the company wanted the product to be considered as a simulation rather than an action game. We disagree.]*

Sid Meier's Railroad Tycoon topped the distinguished list of nominees for **Best Strategy Program**. Other titles recognized in this category were: **Activision**'s *Shanghai II: Dragon's Eye*, **Interplay**'s *Battle Chess II*, **Spectrum HoloByte**'s *Flight of the Intruder* and **Strategic Simulations**' *Second Front*.

The **Best Sports Program** award was hotly contested between two golf games (**Access Software**'s *LINKS* and **Accolade**'s *Jack Nicklaus' Unlimited Golf & Course Design*), two football games (**Electronic Arts**' *John Madden Football* for the SEGA Genesis and **SEGA**'s own *Joe Montana Football*) and the new version of a previous winner in this category (*Wayne Gretzky Hockey 2* from **Bethesda Softworks**). The winner was *LINKS*.

For **Best Action/Arcade Program**, *Faces... Tris III* from **Spectrum HoloByte** was selected. The designer of *Faces* was officially welcomed to the United States during his acceptance of the award. Other nominees included: **Accolade**'s *Star Control*, **Cinemaware**'s *Wings*, **Walt Disney Software**'s *DuckTales: The Quest for Gold*, **SEGA**'s *Castle of Illusion Starring Mickey Mouse* and **The Learning Company**'s *Super Solvers Outnumbered!*

State of the Consumer Software Industry

At the SPA meeting, executives seemed very concerned about the pending **Sierra-Broderbund** merger (See "Inside The Industry" on page 62). Robert Garriott of **Origin Systems** observed that mergers are currently attractive to entertainment software companies because the larger entities they create establish economies of scale in product development, marketing (extra visibility) and access to capital (risk distribution). Observing the imminent arrival of multimedia, Garriott emphasized the need for a capital influx in the software industry and predicted that more mergers and acquisitions would be on the way and that the industry could go through a two- to three-year consolidation phase.

Mark Goldstein of **Reality Technologies** (developers of *CEO* for the **PRODIGY® Interactive Service**) believes that computer entertainment will reflect a "narrowcasting" approach meeting special interest needs (analogous to cable television). As producer of a popular entertainment product (as well as consultant for **Merrill Lynch** and several insurance companies with regard to programmed trading), Goldstein sees more of a confluence between entertainment and educational products in the future. He punctuated his remarks with a quotation from Marshall McLuhan, "He who says education is different than entertainment doesn't know the first thing about either."

Illustrating the confluence of both educational and entertainment software, publishers in both fields are excited about the potential for CD-ROM combined with an intuitive interface for both educational and entertainment products. With one-third of the adult population in the United States reported to be functionally illiterate, the trend toward "ease-of-use," real-voice tutorials and near-broadcast quality graphics in CD products could feasibly have a major impact on the future of society, analogous to the impact of television.

With regard to the retail end of the consumer software industry, Glenn Ochsenreiter of **Waldensoft** observed that his data showed economic recovery west of the Mississippi as much slower than on the east coast. He underscored the importance of the video game category by observing that during the Persian Gulf Conflict, video game sales accounted for 10% of **Waldensoft**'s total sales. All other categories were softer than expected except for video games and MS-DOS software priced between $70 and $200, possibly indicating that both youth and the premium software buyers have discretionary spending money that is relatively untouched by economic downturn.

If, indeed, Ochsenreiter's data is correct, this would forecast a much stronger second half of 1991 for consumer software than many have expected. This stronger second half would be predicated upon the return of middle income customers who would finally have discretionary income once again.

Ochsenreiter also observed that Apple II and IIGS titles declined by 36% in 1990 over their sales of 1989. This means, of course, less shelf space for Apple II and IIGS titles and signals an even steeper decline in development projects for these venerable systems. On the bright side, more shelf space is opening up for consumer software oriented toward the Macintosh platforms. In education alone, Ochsenreiter cited the number of Macintosh titles as being up 23%. He did not comment on Macintosh trends in entertainment software, but other discussions at the SPA suggest that we can probably expect to see more titles on the Macintosh in the near future because of three possibilities: 1) MS-DOS publishers who are pushing the limits of that platform need another stable platform with similar capabilities to port their products to; 2) Macintosh is a natural for multimedia products and may be a significant factor in the home CD-ROM market; and 3) Apple's apparent new "commitment" to the home

user may create a healthier atmosphere for developers. Indeed, John Sculley's keynote address at the conference underscored Apple's movement toward what he called "consumer electronics market principles" in future Apple products (i.e. decreased production times, reduced costs, wide range of choice and ease of use).

Other interesting observations were presented by Gene Schenberg, a buyer for **Radio Shack**. He began by noting that **Radio Shack**'s mail order business is proportionately equivalent to the volume generated by the **Sears Roebuck** catalog department in their retail mix. He observed that adventure games and simulations are the most successful entertainment products in his company's shelf mix, but cautioned that sports programs and fantasy role-playing games do poorly in their mix. Fans of fantasy role-playing games should probably not take this comment as an important indicator, however, since **Radio Shack** has historically been very conservative in the fantasy titles they allowed on their shelves.

Video Games — Computer Entertainment?

The major question during the video games panel seemed to center around CD-ROM. The age demographics seem to be reaching a more mature level as the machine capabilities of the 16-bit platforms are increasing, but the real excitement seems to focus on CD-ROM games in the future. Ken Wirt of the **NEC Home Entertainment Division** boasted the only CD-ROM peripheral currently in place. He cited figures of 750,000 **Turbo-Grafx 16** units in the United States and 500,000 total CD-ROM drives for the system in use worldwide.

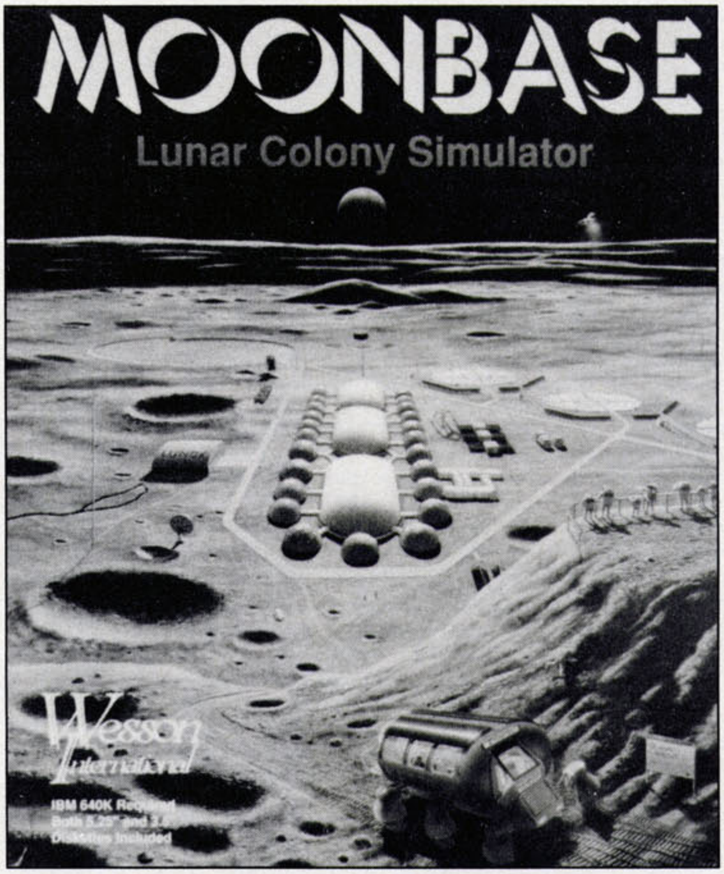
Al Nilsen of **SEGA** stated that there is a general trend in the video game market in which consumers and retailers are becoming more selective. He also cited statistics which indicated that 30% of **SEGA** game players are 18 years of age or older. With 1.2 million units placed in the U.S., **SEGA**'s goal is to make the CD-ROM drive a true mass-market product. Though a CD-ROM drive and at least five titles for the **SEGA** will ship in October for the Japanese market, Nilsen does not envision the drive entering the U.S. until it can be produced and sold at a $199.00 price point.

Perhaps the most stunning statement from the panel came from Bill White of **Nintendo of America**. Asked by *CGW* about the widely-reported announcement that Sony would be manufacturing a CD-ROM drive with distinctive standards for the *Super Nintendo*, White categorically denied that there was a deal between Sony and Nintendo and asserted that the Reuters wire service story (quoting a major Japanese financial newspaper) was absolutely fictitious. Yet, White went on to state that he expected a CD-ROM for the *Super Nintendo* by 1993. He also stated his estimate that the *Super Nintendo* would be priced at under $200 and have, at least, nine to ten titles when it is launched onto the market (with 20-30 new titles by Christmas).

On the Verge

This year's spring symposium seemed to raise more questions than it answered. The software industry has proven that it is healthy enough to withstand economic downturn, yet there are many avenues to pursue in terms of identifying growing profit centers and stable platforms. This year's symposium underscored the diversity in types of markets the consumer software industry supports. Visions of multimedia and mass market channels dance in the heads of software executives. The question is, how does one get there? One hopes the path is better delineated by the SPA's Fall Conference, but it may be two or three years before the results are clear-cut. One thing is certain: This is an exciting industry to be involved with. **CGW**

Circle Reader Service #29



TITLE:	Moonbase: The Lunar Colony Simulator
SYSTEM:	IBM
PRICE:	$49.95
DESIGNERS:	Robert Green, Brett Adams and Brendan O'Connor
PUBLISHER:	Wesson International Austin, TX

Hot Dog Stands on the Moon

Moonbase: The Lunar Colony Simulator

by Scott Pelland

From the day mankind abandoned the trees for a living on the ground, no landscape has been so forbidding, barren, hostile or worthless that we haven't tried to inhabit it. *Moonbase: The Lunar Colony Simulator* from **Wesson International** takes that ageless urge one great leap further.

The Race for Self-Sufficiency

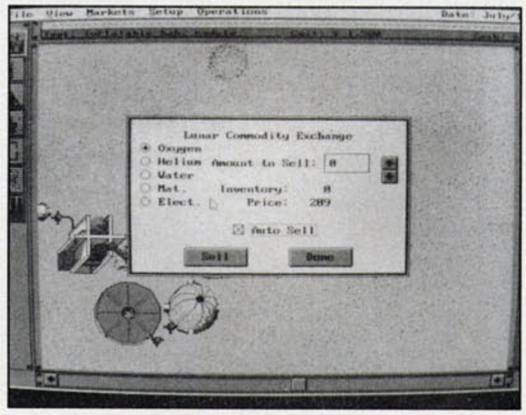
The simulation begins with a barren patch of randomly generated lunar terrain, which includes craters, regolith (lunar soil) and various hidden features mixed with whimsical oddities. Armed only with a NASA charter and $10,000, the base commander's task is to create and run an economically self-sustaining base. Since the model is open-ended, the measure of success is left up to the player.

At the heart of *Moonbase* are icon tiles representing a wide variety in infrastructure. Habitats, manufacturing facilities, greenhouses, hotels and other assets are placed on the lunar surface. Then they are hooked up to a power source and thermal radiators (so nobody gets cooked during the long lunar days) and connected with roads. Landing pads and communications centers link the colony to Earth while roving miners scoop up the regolith for valuable oxygen and helium compounds. Additionally, scientific labs and astronomical stations can be set up — all for a price.

The base commander also staffs the facility and keeps the "lunies" happy by seeing to it that they aren't overcrowded and that they have recreational facilities. In turn, the lunar workers produce commodities such as LLOX or low-G manufactured materials and electronic components for sale to Earth. Other activities include scientific research, which may lead to surface expeditions to find water ice or tourist attractions like a large black monolith (what moon would be complete without one?).

As the months and years pass, the commander is faced with many decisions and problems such as products to produce, when to sell inventories, number of maintenance sheds necessary to support a moonbase or why all the landers are crashing. Some of the solutions simply require common sense. Landers, for instance, crash because there are insufficient landing pads. Economic problems are not so easily managed and can reduce an aspiring commander to a blithering maniac if left unchecked. Luckily, there is help. Graphs accessible from pull-down menus give valuable information on product price histories and market

demand. Productivity can be checked and balanced by providing the optimum number of workers and keeping the resupply level at 100%. NASA funding is more or less a mystery (some things never change), although higher funding levels may be inspired by building more science facilities and undertaking exploration of the surface. Another important aid is the Lunar Commodities Exchange that displays current prices in a continuously updated scroll bar. The base commander also controls budgeting and resupply.



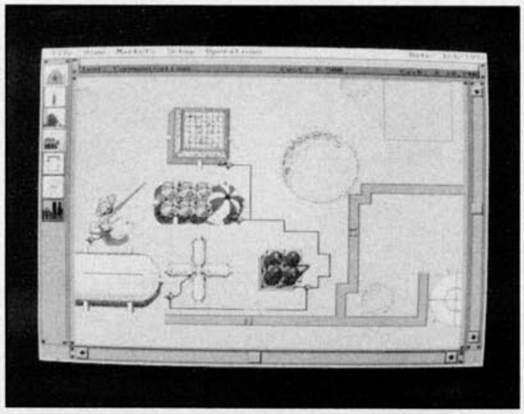
Keeping the base fully resupplied is the key to lunar survival and the key to successfully beating the high cost of Earth products is *not* to bring products from Earth. The two highest costs are for water and hardware. If exploration teams discover water, resupply costs will be cut almost in half. Hardware resupply can be held in check by constructing maintenance facilities. Still, no matter how many maintenance facilities are built, some goods (perhaps golf balls and the latest issue of *CGW*) must be imported. Food can and should be grown on the Moon in greenhouses. Even with periodic infestations of aphids, the savings are enormous.

To put a new moonbase on a firm footing requires a bit of strategy. Novice commanders are apt to start building and spending from day one and will soon find themselves in a downward spiral of ever-increasing costs and low resupply rates, leading eventually to base paralysis. One way around this is to spend up to ten years exploring the lunar surface before building anything. During that time NASA will fund the non-existent moonbase at a fairly substantial rate (up to $50,000 per year). When construction finally begins, the moonbase will have plenty of cash to build startup industries like LLOX production that immediately begin to pay off. The truly savvy commander will go even further, rejecting all possible lunar sites until one with water (always found in craters) is generated. Access to a source of lunar water almost insures success.

Once the base is producing goods and commodities, the danger of overproduction arises. By keeping output fairly low, limiting construction to one or two of each type of production facility, insuring that demand and prices remain fairly high, and allowing the base to build a reserve of cash as a hedge against recessions (which occur on the Moon as they do on Earth – all too frequently), the base commander can avoid this danger.

Commanders can also cut costs by limiting the construction of certain facilities. One thermal array, for instance, can service a substantial lunar base. This is not strictly realistic, but it does work and save money. Cutting resupply percentages also works,

up to a point. A resupply rate of less than 50% will be felt, but minor cuts (of up to 25%) have no long-term effects.



As realistic as the simulation is, there are a few features that the designers unfortunately left out. For instance, there is no lunar night. Imagine the distress of a base powered only by solar arrays plunged into two weeks of utter darkness! The topography is also limited and does not in and of itself present a challenge like the variety of landscapes generated in *SimCity*. The fixed position of power and thermal hookups limits how buildings can be placed with respect to each other, which impacts base layout. Even more noticeable by omission are the various artifacts that can be discovered (but which seldom actually appear). Some of the finds are so intriguing or just plain nutty, such as a rock formation that looks like Elvis, that it is a crime they don't show up.

Perhaps the most annoying aspect of the program is the sound, entirely limited to disaster warnings. Granted, no one can hear you scream in space, but when the obnoxious warning buzzer comes on after half an hour of utter lunar silence, the ensuing outcry is enough to be heard back on Earth.

One must also speak about the lack of a plot in the novella/manual. If a novella is the chosen form of presentation for game data, it could certainly use more story. In defense of the book, one might note that it has some interesting speculations about day-to-day life on the moon. Of more value, however, are the boxes of information scattered throughout the novella. Fortunately, there is an index to help one find the necessary information when needed.

For the most part, *Moonbase: The Lunar Colony Simulator* accomplishes its stated objective. Working with NASA contractors, the design team at **Wesson International** has put together a realistic simulation that offers a challenge. Coming from a company that designs air traffic control simulators, the realism is not surprising. What is surprising is that the designers of such a serious simulation took such pain to add audio cues, visual spice and a pinch of whimsy to the mix in this product. The icon graphics are of high quality and the animation of lunar landers/rovers lend a feeling of life to the lifeless landscape. Building and sustaining the economy of the Moonbase takes patience and experimentation — both marks of a good simulation. For anyone who would like a strong dose of futuristic reality with the pleasant ambiance of strategy and entertainment, *Moonbase: The Lunar Colony Simulator* is the appropriate prescription. **cgw**

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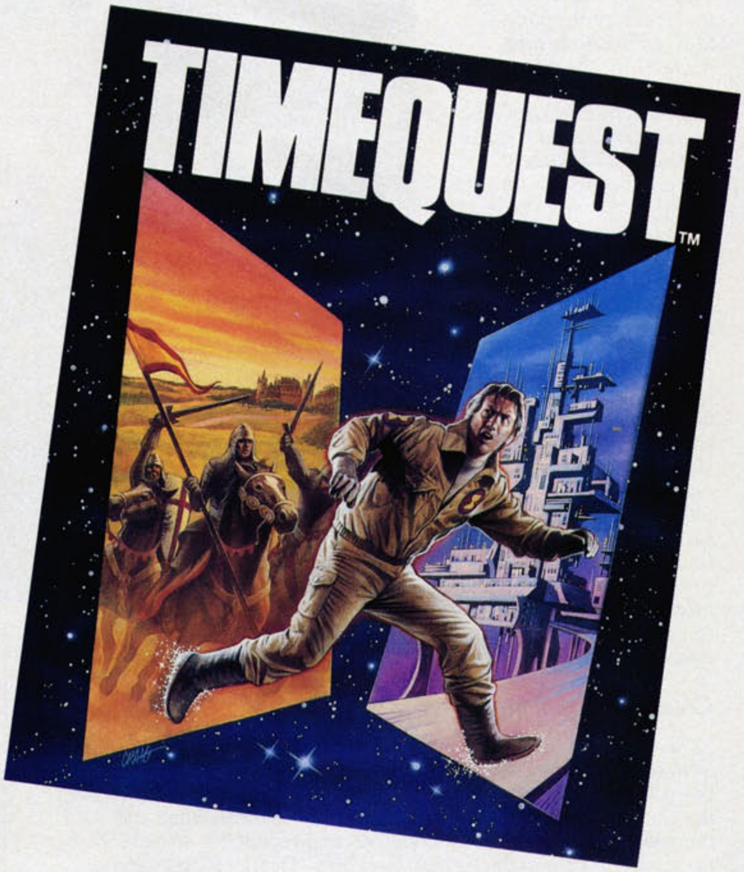
A high speed chase through time, TIMEQUEST is a classic adventure game that features pageantry, danger, and puzzle-oriented adventure. The game is epic in scope, spanning four continents and three thousand years — from Stonehenge to Hitler.

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Written by Bob Bates, author of *Sherlock: The Riddle of the Crown Jewels* and *Arthur: The Quest for Excalibur,* TIMEQUEST is the latest from Legend Entertainment, the company that brought you the hit game *Spellcasting 101: Sorcerers Get All the Girls.* A treat for science-fiction fans and adventure enthusiasts alike, the game features:

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- ☐ superb musical score featuring RealSound as well as Roland and AdLib support
- ☐ unique Legend screen design with pushbutton options
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England 452 A.D. Escape a death-blow from Riothamus, the real-life King Arthur.



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EGA graphics shown above. Actual screens may vary.

Circle Reader Service #44

Life in the Vast Lane

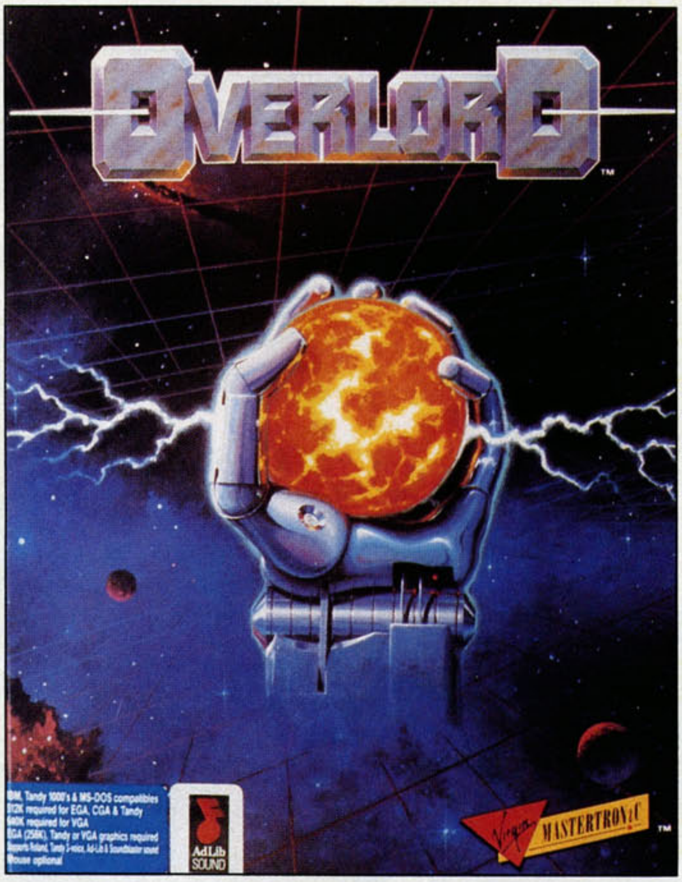
Virgin Mastertronic's Overlord

by Leah Wesolowski



Title:	Overlord
Systems:	Amiga, Atari ST, C-64/128 and IBM
# Players:	Solitaire
Price:	$49.95
Designers:	David Perry and Nick Bruty
Publisher:	Virgin Mastertronic Irvine, CA 92714

The inhabitants of the Epsilon galaxy had begun to believe their own propaganda and, as a result, had decided that they were totally secure in their supreme rule of known space. Leave it to a group of scientists to muck things up, though. In their attempt to find a more efficient means of space travel, they uncovered four heretofore unknown dimensions: Hitotsu, Futatsu, Mittsu and Yottsu. This would not have been such a disaster had each of the four new dimensions been limited to uninhabited planets, but each dimension had its own peculiar alien presence. Now, it will take the exceptional skill and strategy on behalf of Epsilon's ruler to protect his people from the menacing forces of Wotok, Smine, Krart and Rorn which threaten to write a new chapter of death and destruction in the history of this civilized empire.



Overlord as Supreme Ruler

This is where the player comes in. In **Virgin Mastertronic**'s *Overlord*, the player assumes the role of Epsilon's ruler. As "Overlord," this ruler must set an efficient and "equitable" tax rate, provide for the citizenry's nutrition, mobilize space navies for defense and transportation, construct safe habitats and recruit the armed forces necessary to defend the galaxy. Epsilon's "Overlord" will need to demonstrate both organizational skills and extreme composure in the face of every crisis. This is the player's task and, in the context of the game, is handled from the command center of one starbase.

Command Economy

Once seated, the player/Overlord will go to the main screen where a view of the current galaxy and its stars twinkle at him via a special porthole. It is here that incoming messages are displayed and the Overlord can issue any necessary commands via the icons located on the lower left corner of his screen.

The Government icon takes the player to the screen where the tax rate is set, money is transferred to starbases and production can be monitored. The player can also see how many ships are on or around each planet and rename the planets to assist mnemonically (planet names like "Mineral 1" and "Agriculture 4" can be extremely helpful).

Another icon functions as something of a "Galactic Accounting Office." It handles unit purchases in the context of international currency (credits), minerals and energy, so that the player may monitor expenditures of scarce resources. There is also a navigation icon for the Overlord to use in locating his starships within the galaxy and issuing movement orders.

The next icon is the crucial "format planet" icon. After the Overlord has taxed his citizens a substantial amount, he may purchase the planet formatter (a special ship which can be sent off to an unformatted planet in order to bring life to a dead world). Other icons function as: a dispatching function (to fuel, load and unload ships); a planetary surface manager (to crew and command mining and horticulture stations); a recruiting depot (players hold down the recruit button until platoon manpower reaches two hundred); combat information screen (to manage manpower, readiness and disposition of troops); and an intelligence center (to purchase information on opposition troop numbers).

Looking for a Few Good Space Marines

It is usually best to wait until all planets are self-sufficient before breaking the peace treaty with the aliens by recruiting armies. Premature recruiting can be one's downfall in *Overlord*. However, once a solid base has been established, the wise ruler provides for a good army.

Once the troops have been assigned to platoons, they immediately undergo basic training. Each platoon is ranked by how much of that training they have received. If the troops are needed right away, the commander may not rise to a full-fledged five-star general and the player may have to settle for cadets when equipping the forces.

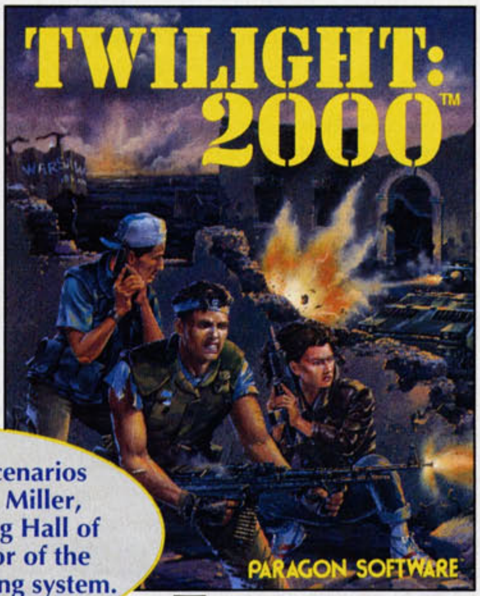
Formatting Blank Disks (Er, Planets)

Once the Overlord's planet formatter has completed its first mission, the player will then be able to view this new world. The new planet could be a metropolis (perfect for a large population and its subsequent high tax base), a desert (great for generating solar energy), a tropical planet (ideal for horticulture stations) or a volcanic planet (rich with fuel and minerals to be mined). Before putting those new worlds to use, however, the Overlord is well advised to set his formatter off to work on another world. Time is of the essence in this

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Both featuring scenarios written by Marc Miller, Adventure Gaming Hall of Famer and creator of the Traveller role-playing system.

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IBM screens shown.
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game (the real-time element rides again). If there are no more planets to format, the best end use for the formatter would be to trash it. From the docking bay screen the Overlord can choose to destroy a ship. This results in putting all of the resources it cost to create the ship back into the planet's holds.

A Gang of Four

There are four aliens to be defeated by the player in order to insure continued galactic dominion. The first, Wotok, is not much of a challenge. The second, Smine, is relentless (but not selective in his attacks, so not too hard to beat). The third, Krart, is both intelligent and strong. He does not bother to take the Overlord's weak planets. Instead, he concentrates his efforts on planets with the most resources and brings plenty of forces when he assaults. One had better have sufficient reinforcements ready to stave off such an attack! Last, and most dreadful of all, is Rorn. He attacks from beginning to end, never ceasing. To make things worse, one has logistics problems when facing Rorn. During campaigns against Rorn, one's ability to purchase the items needed to form a successful colony is somewhat diminished. Rorn's group of evil marauders is not to be taken lightly.

Space Grunts

The battles themselves are simple enough. The Overlord simply lands a battlecruiser on the enemy world and clicks the combat icon to unload them. The center of the screen displays a graph enabling the Overlord to judge the likelihood of defeating the enemy. It is also possible to control the aggression of one's troops in increments of 25%. A low aggression (25%) allows troops to fight for a long period of time, while a high aggression (100%) may kill off troops much faster, though their strength is increased during the shorter period. Since battles are determined by which army is strongest, the aggression factor plays a major role in combat.

Overlord Overall

This game is not for the player who cracks under pressure. It takes lots of organization and skill to defeat the alien foes. It is definitely "real-time." Players cannot "pause for the cause" and leave the game running, lest they return to find that a meteor has crashed into one of their best planets or Rorn has taken over their starbase.

If this reviewer were to modify this game, she would find very little to do. One major change would be to put all of the icons, along with a suggested new "pause" icon, in a band across the bottom of each command screen. This would enable one to access any part of the game from any screen. Second, she would design the recruit function so that troops would be recruited in increments of two hundred instead of having to wait for the numbers to scroll up that high. Finally, she would add a new field to the navigation screen enabling the player to see how many troops a battlecruiser is *actually carrying*.

The game is easy to learn and a delight to play. The sounds are quite nice throughout (from the rattling sounds of ships docking or taking off, to the hushed female voice telling the Overlord there is a "message") and the graphics have plenty to offer even the most jaded strategy player. Hats (or, in this case, space helmets) off to the designers of *Overlord*. *Overlord* conquered this reviewer's taste. **CGW**

TITLE:	Estarian Conquest
# PLAYERS:	2-25
Cost:	$37.50
Designer:	Bentley C. Griffith
Publisher:	Griffith International P.O. Box 530703 Birmingham, Al. 35253

25-Player *Overlord?*

Estarian Conquest *On-Line*

by Leah Wesolowski

Estarian Conquest could be one of the best "on-line games of the '90s." In many ways *Estarian Conquest* is very similar to *Overlord*, almost a sequel. In *Overlord*, the Epsilons are struggling to maintain their rule; in *Estarian Conquest*, the players are scrambling to re-establish their rule. It is as if the Epsilon empire lost the battle against the dreaded aliens and was rebuilding.

After centuries of ruling the galaxy, the race of Estarians has disappeared, leaving their galaxy in a complete state of chaos. Each of its civilizations is now fighting for supreme rule over the entire galaxy. To win, a player must defeat all of the 25 opponents or be declared supreme ruler by his opponents.

Estarian Versus Overlord

As in *Overlord*, the player of *Estarian Conquest* must tax his empire. Cash is used to purchase terraformers (which bring life to desolate planets), war ships (including troop transports and armed combat ships), scouts (equivalent to the spy icon in *Overlord*), starbases and ground batteries to defend the player's planets as well as armies to conquer another player's planet. Each planet is taxed at the same rate, however.

Welcome to Estaria (Now Go Roam)

When play begins, each player is given a planet with a potential of 100 production points. Thus, at the tax rate of 65%, the planet will produce 65 points of production per round. At start, each player is given four fleets to send on different missions. Each fleet can be added to as the game progresses or new fleets can be created using the ships built on a planet's surface. Unlike *Overlord*, there is no limit to the number of fleets one can control and no limits are set on the number of ships in a fleet. However, if a player has too many fleets, the player may not be guaranteed enough time on the BBS to give orders to all of those fleets.

Ruling the Estarian Galaxy

The galaxy is a square grid whose size depends on the number of players. A game with 25 players is played on a 45 X 45 grid. Each box or sector is one light-year wide and it may or may not contain a planet. The number of planets is roughly five times the number of players.

Each time the board is "maintained," the turn is completed, the game updated and a new turn begins. It is during this time that all moves are calculated and each battle is decided. Battles are fought and won by the number of ships a player has in his attacking (or defending) fleet as well as the type of ships the fleet is made up of. A fleet containing 25 cruisers might not defeat a fleet with only 6 battleships. A player can also use his fleets to bomb a planet, reducing its production and weakening its defences so that the attacking player can send troops in to take over the world.

Play Time

Estarian Conquest is very time-consuming. It is recommended that the player plan moves off-line to eliminate lengthy connect time charges. It is also very helpful to "capture" a map of the galaxy at the beginning of the game to aid in the organization of the player's empire.

Fleets: The Added Dimension

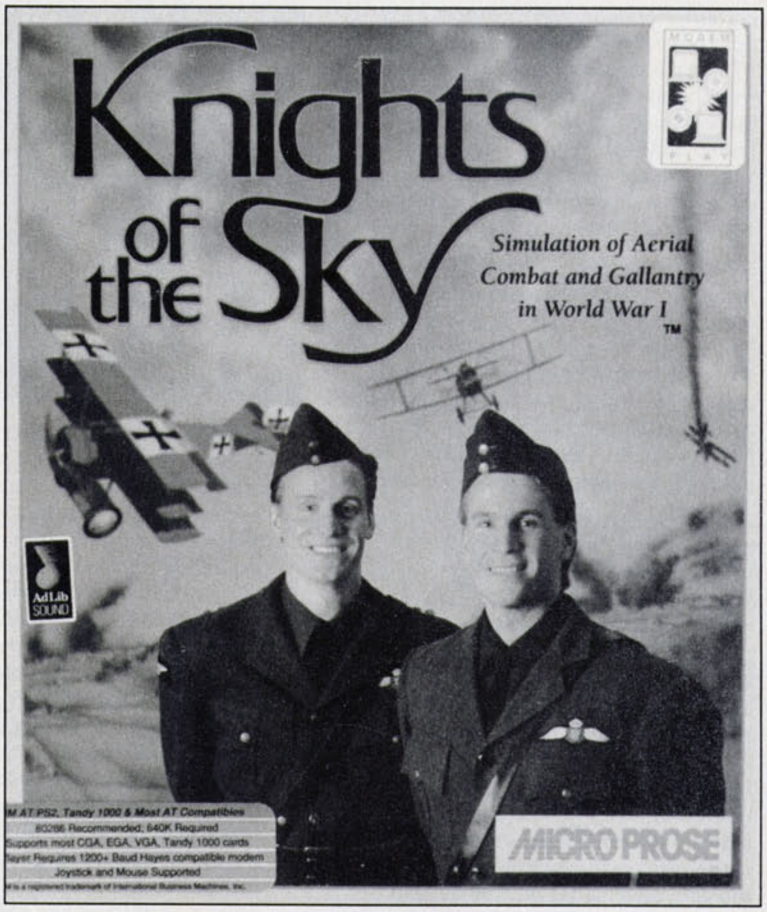
In *Overlord*, the task of landing, fueling and flying ships becomes tedious. Of all the features in *Estarian Conquest*, the feature this reviewer feels would work nicely in *Overlord* is the ability to assign ships to fleets and order all ships in the fleet as a single task force, although the way *Overlord* is currently set up (with only three docking bays per planet), fleets would be limited to three ships. However that would still reduce the time a player spends at *Overlord*'s navigation screen.

For more information, call The Matrix, 2400 baud: (205) 323-2016 (4 lines).

Jousting Over ~~Germany~~ France

Tips for Knights of the Sky

by Gary C. "Mo" Morgan



Before the advent of radar, night vision goggles, infrared search and track systems, radar warning receivers and electro-optical magnified video, tactical fighters had only one primary sensor, the pilot's eyeballs. Return with us now to those thrilling days of yesteryear, almost four generations ago, when air combat was as much a fantasy concept to people of the new 20th century as space combat may be to us today. When brave men flew above the blood-soaked, muddy trenches of "No Man's Land" in frail kites driven by tiny engines, armed with one or two machine guns (which usually jammed) and fought each other to the death (since parachuting from a stricken plane was considered cowardly).

MicroProse recently released their newest air simulation beauty, *Knights of the Sky* (*KOTS*), which depicts World War I aerial combat along the Western Front from 1916 to 1918. Russell Sipe reviewed *KOTS* in "Jousting over Germany" (sic — actually "over France") *[Pub. Note: It's not my fault. My editor picked the title.] [Ed. Note: It's not my fault. My publisher told me he wanted a snazzy title. France lacked the assonance.] [Pub. and Ed. Note: It must be the assistant editor's fault.]* in issue #79 of *CGW*, so this article shall supplement it by suggesting some tactical tips for players that should enhance survivability and add to the enjoyment of playing the game. Readers unfamiliar with *KOTS* may glean enough information from these tactical tips to familiarize them with the content of the game and, it is hoped, stimulate more investigation into this excellent air combat simulation.

Using Your Head When Making "Seat of the Pants" Decisions

MicroProse offers two players the opportunity to play each other via modem or direct connect (called "head-to-head"). A human flying opponent can be far more unpredictable and challenging than the computer opponents encountered in most flying simulations. A player can also hop into any type of aircraft and fly a one-on-one air combat against any of the famous aces, each in his own personal aircraft type and color. To minimize frustration and encourage play of the game, players can select one of five different levels of difficulty, the lowest level being very forgiving (no crashes) and the highest level providing the maximum challenge (such as enemy aces).

Like most MicroProse simulations, in the primary play mode the player can either select a specific mission type or may enter a "campaign" (series of missions) and be randomly assigned one mission type at a time. The campaign game involves an interesting aspect of role-playing since the player "becomes" a character. An aviator enters a campaign in 1916 as an enlisted pilot for either the French Air Service or the British Royal Flying Corps.

Selecting a Flying Machine

Whether playing a single mission or a campaign, one of the most critical decisions a player can make is selecting the aircraft he will fly on the next mission. For the Campaign Game, MicroProse has realistically placed only those aircraft into service that were available at the time each mission is to have occurred. In the early part of the war (1916), only the Airco DH2 and the Nieuport 11 are available. As the war progresses, newer and more capable

airframes appear. The Nieuport 11 is recommended at first, then the Nieuport 17 when it appears. Once the SPAD 7 appears, select it, and later the SPAD 13. Although the Sopwith Camel is always touted as the finest Allied fighter of the war, there are several significant advantages to flying the SPAD (which most American pilots flew in 1918).

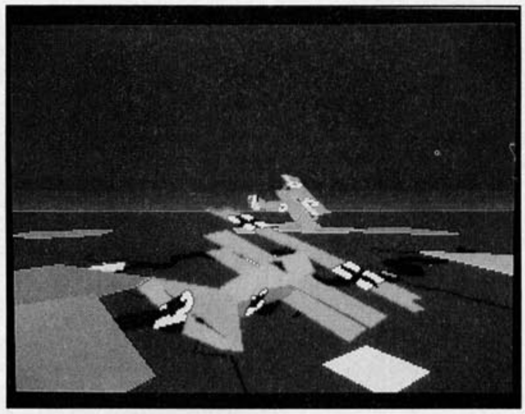
Whether the year is 1917 or 1991, the most important axiom to remember about flying fighters is "Speed is Life." The SPADs are the fastest Allied aircraft available, with more horsepower and greater maximum speeds than any other machines. Speed makes all the difference when trying to run down a fleeing enemy or escape from a pursuer.

The incredible attention to authenticity is evident during dogfights in *KOTS*. When aircraft climb or turn quickly, they "bleed off energy" or slow down due to the aerodynamic forces acting on them (lift and radial G forces). Each type of aircraft accelerates, turns and climbs authentically in *KOTS*, and relationships between aircraft during combat are extremely believable. It is commonplace in *KOTS* to accurately employ energy maneuverability (speed and turning) to perform the entire gamut of basic fighter maneuvers in three dimensions against multiple adversaries with all aircraft performing realistically.

Enjoying the View

World War I aircraft had no sensors, like radar, to provide situational awareness to the pilot. Visual lookout was (and still is) paramount, first for survival against attack, and secondly to find targets to attack. Continuously scan around the aircraft. Positions around an aircraft are based on clock positions, with the top of the clock facing the direction the aircraft is flying. Forward is twelve o'clock, behind is six o'clock, to the right is three o'clock, and to the left is nine o'clock.

The 1, 2, 3 and 4 number keys are used for views from the cockpit (1 = 12 o'clock, 2 = 6 o'clock, 3 = 9 o'clock, and 4 = 3 o'clock). Since parts of the fuselage and wings block part of the view, one can avoid trouble by using the F5 (from behind looking forward), F8 (from forward looking aft), F6 (from left looking right) and F7 (from right looking left) "wingman" views, since a wingman flying with the player would be able to see around one's plane. Wingman views show a player's aircraft from various positions and reveal more sky than the cockpit views may show. The F2 key shows



the position of other aircraft relative to one's aircraft (looking through your aircraft to the other plane), and should be used sparingly if realism is desired. The shift-F2 key combination shows the opposite view, from the enemy aircraft to the player's. This is a useful feature designed to reduce the tunnel vision which many players experience in an air combat simulation. In reality, one has a full 360º perspective, so one can keep his eye on the opposing plane without always looking out the forward cockpit. Some players may object that this is almost cheating (like having an AWACS), however, since it *always* reveals the enemy position(s) and, in reality, enemy planes can become small specks in that 360º perspective. So, some believe the F2 key should only be used when one wishes to minimize WWI realism, since it may offer *too much* information.

The Intercept

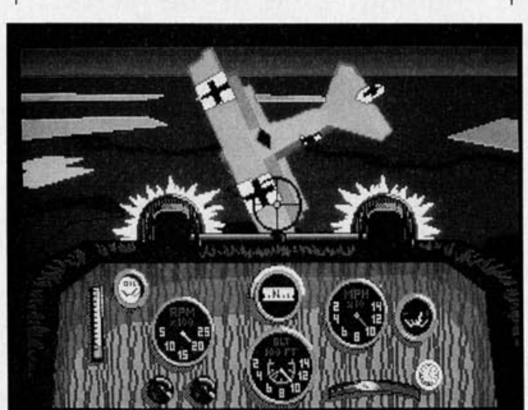
All air combat engagements begin with an "intercept," in which two or more opposing aircraft fly into combat range with each other. Most intercepts come from an attacker who is in the forward hemisphere (his three to nine o'clock position) of the target. Intercepts from behind the three-nine line of a target require a significant speed advantage from the attacker. It *is* possible to run down a slow enemy two-seater, and the high maximum speed of the SPAD 7 or 13 enables the player to close in on some of the slower enemy fighters (Fokker Eindekkers and Halberstadts) from behind. Clearly, the object is to get behind the enemy aircraft. To accomplish this, one must first intercept him based on knowledge of his flight parameters. Without radar to help, eyes open!

Identification: Friend or Foe

Enemy aircraft initially appear as dots with shadow dots below them on the ground to indicate altitude. The idea is to watch the dot's movement and try to determine altitude, range, speed and heading (which is a lot of information to gather from a little dot). Altitude and range are relatively easy to identify; one simply notes how high above or below the horizon the dot is and tries to climb or dive to put the dot somewhere near the horizon. Climbing early helps considerably, particularly to arrive at a comparable altitude and regain the speed which will be needed to begin a turning fight.

As the aircraft close together, the enemy dot turns into a dash, then gains more shape and detail. It won't be hard to quickly identify Halberstadts, Albatroses and two-seaters at long range, particularly with a VGA display. Heading and speed are related. A dot that doesn't move much laterally is either going in the same direction or the opposite direction. (If the dot stays the same size, he is heading the same direction; if he grows quickly, he's coming head-on). Pilots should never let the enemy come straight on (see below), lest one face a succesful head-on attack from the enemy.

If the dot moves laterally, then a crossing geometry is present and the player will need to fly a leading pursuit profile. He should move either left or right. If in doubt, the player should try to put the dot in the center of the gunsight aiming ring and fly a level, steady course. If the target is on a crossing flight path, he will fly either left or right. If he flies right, an aggressive pilot should turn in that direction (i.e. bank right and pull to put him on the left side of the ring). Then, the clever pilot should fly to a position ahead of him. Then, when the computer opponent finally crosses the player's flight path, the player can simply turn to the enemy's heading and shoot. When one sees some detail on the enemy aircraft (i.e., the aircraft is represented on the screen by more than a mere dot or dash), it is advisable to put the "bogey"



in the center of one's aiming ring and to continue turning one's aircraft in order to keep the enemy "dead" center in the aiming ring. The player should wind up behind him, heading his direction. Remember, once spotted by the enemy, expect him to begin maneuvering.

Losing by a Foot When Going Toe-to-Toe

Flying directly toward an enemy aircraft coming head-on is the quickest way to be shot down. It is important to avoid straight-on intercepts and be certain to wait until the enemy aircraft has passed by before making a hard turn to pursue. The best method is to keep the enemy aircraft outside the aiming ring (over the machine guns) until it is clear that one is behind him (wait until the plane flies off the left or right edges of the player's monitor). Then, one can roll into 60 to 90 degrees of bank and pull back on the stick, keeping the horizon in the center of the aiming ring of the gunsight. If one finds himself above the target, it is profitable to dive slightly below the horizon. If below the target, the proper maneuver is to pull up slightly above the horizon. Then, one can complete the turn to the heading the enemy fighter was originally travelling on. Now, the "bogey" should be visible to the front of the player's plane. Of course, it is entirely possible that the bad guy has, by this time, spotted the player and started to turn toward the player's tail for his own kill. The player will need to keep turning in order to follow him. Alert pilots will want to keep checking their "six o' clock." The enemy pilot just might be "dragging" the player and setting him up for a shot by an enemy wingman.

Lining 'Em Up for the Kill

Occasionally, two-seaters will not turn or maneuver and one need only get behind them and fire. When attacking two-seaters, one must avoid flying at or above their altitude lest the observer open fire with his rear-facing gun. It is an excellent idea to stay below a two-seater and open up at long range, aiming slightly above the plane so that the tracer rounds fall into him.

To hit a maneuvering enemy fighter, one should attempt to get inside the enemy's turning circle and follow up by aiming at a position slightly in front of and slightly higher than the "bad guy" when firing. This may place the target just under one's guns or engine. Practice will refine the amount of lead needed and optimum range and time to open fire.

Clutching the Throttle

Flying a cutoff geometry (inside his turning circle) will allow for closing the range, but throttle position is also critical. Flying at 100% throttle will mean closing the range too quickly, leaving insufficient time to settle down, aim and shoot. Flying at 80-90% is optimum, depending on the types of planes in the duel. Assuming roughly comparable aircraft (say, the player's SPAD 13 and an enemy Albatros D3/D5), 90% throttle is best. With a Nieuport or SPAD 7 against a Halberstadt or Eindekker, 80% works fine. Less than 70% will create long delays in attaining shooting parameters and will force the player into a predictable flight (making the player vulnerable to enemy attacks). Conversely, by staying at 90-100% throttle, it will be more difficult for enemy aircraft to sneak up and fire. One

should constantly watch for an enemy plane reversing its turn, particularly in close. If one is turning left and sees the enemy coming from left to right, the best defense is to fire early and hope for a "snap shot" (in which he flies directly into the player's bullets). If he keeps flashing past in an opposite turn, the appropriate countermove is to continue making a hard circle. Then, when he is visible once again, he will probably be in a gentle turn at a safe distance from the player's plane.

Getting the Truck Out of Dodge

In an outnumbered situation (typically after attacking an enemy airfield when a whole squadron has come back to land), with discretion being the better part of valor, the best strategy is to climb and run. One great tactic in a SPAD is to outclimb enemy aircraft (especially Halberstadts), hold the SPAD's nose on the horizon at 100% throttle and run away at 120-135 knots.

The Halberstadt is slow-moving in climbing, but can turn quickly. One must be very careful about fighting Halberstadts at very low altitude (under 1000 feet), particularly when they attack near the player's airdrome. They like to drag opponents down to 100 feet and watch them impact the ground in a tight turning fight.

Eindekkers can't turn or climb very well and aren't a serious threat when piloting a Nieuport or SPAD. It is useful to watch out for the Albatros family since they can climb and turn well, and are relatively fast. Fokker Triplanes climb and turn quickly, but are slow. If a player climbs against a Triplane, the Triplane will start slipping back in range. Nothing beats raw horsepower and maximum speed, particularly when using the vertical.

One should never continue to try to outmaneuver the enemy when outnumbered. It is best to look behind frequently. Then, if an enemy plane gets close on one's tail, one can initiate a fresh maneuver. When *not* being tailed, one should put the nose on the horizon and go to maximum throttle. Discretion is highly advisable in this situation, so the wise pilot is continually looking for an appropriate chance to run. Pilots with a good probability of surviving will constantly remember that fuel is limited and higher throttle settings consume it more quickly! A good pilot knows which way to escape and keeps checking to the rear with very quick peeks. When one is in doubt, he should initially head west. Then, once he is out of imminent danger, he should tap the spacebar and see which way to head for home on the map.

Gliding on Home

Regardless of the tactical situation, a pilot should head for the friendly side of the front when the fuel gauge indicates about half full. One might need to fight for several minutes *just to land*. If a safe landing is not made, the mission may not count as successful and one will miss out on promotions and decorations. The farther east of No Man's Land an allied pilot has flown, the higher his altitude should be. Thus, the player may be shot up, but in many cases, will be able to glide home and make a forced landing. This should result in survival and enable the pilot to return to the squadron in order to fly and fight again. **CGW**

Conversions Received

Hardball II (Accolade) Macintosh
Search for The King with cluebook (Accolade) Amiga
Star Control (Accolade) C-64/128
Bard's Tale III, Thief of Fate (Electronic Arts) Amiga
Bill & Ted's Excellent Adventure (Capstone) Amiga
PGA Tour Golf (Electronic Arts) Amiga, Sega Genesis
Ski or Die (Electronic Arts) Amiga, Nintendo
Loom (Lucasfilm) Macintosh
Night Shift (Lucasfilm) C-64
Breach 2 (Mindcraft) IBM
Nightbreed (Ocean) C-64
The Killing Game Show (Psygnosis) Atari ST
Faces ...Tris III (Spectrum Holobyte) IBM
Vette! (Spectrum Holobyte) Macintosh
Death Knights of Krynn (SSI) C-64
Das Boot (Three-Sixty) Amiga
B.A.T. (Ubi Soft) IBM

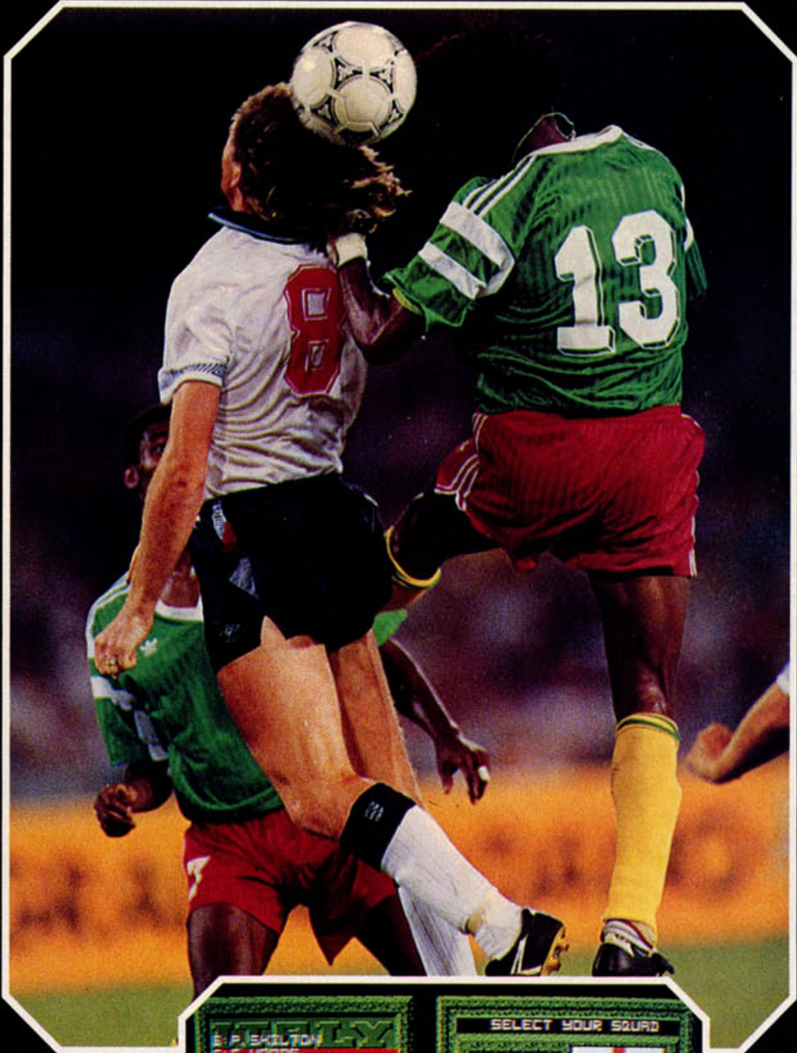
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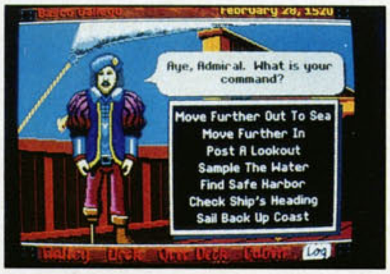
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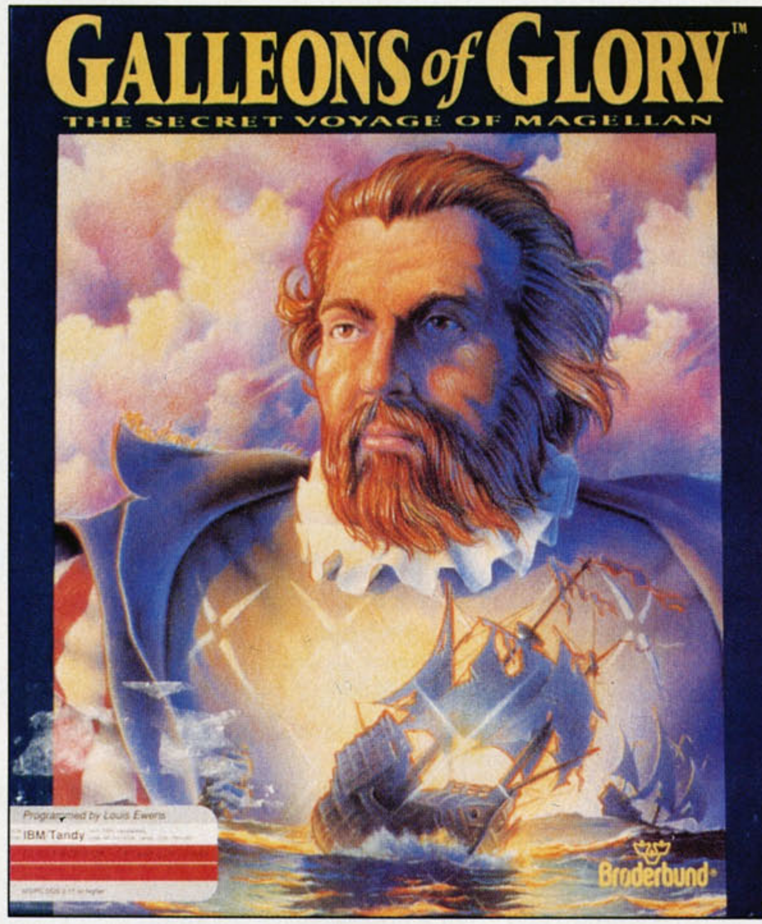
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Magellan in Dire Straits

Broderbund's Galleons of Glory

by Alan Emrich



What problems did admirals of old face? If *Galleons of Glory* is any indication, it may mean being marooned without even the company of Ginger or Mary Ann. Those innovative educators at **Broderbund** have transformed what might have been a classroom simulation into a captivating software package full of history, problem-solving and, in the words of Winston Churchill, "I'll give you traditions of the Navy — rum, buggery and the lash." (Well, okay, not much buggery, but just *look* at those costumes!)

Taking the Low Road

With a title like *Galleons of Glory: The Secret Voyage of Magellan*, one would naturally assume that this game has players setting sail on a stealthy, dangerous excursion around the world in a daring attempt to return to Europe alive and prosperous. (Magellan died in an incidental skirmish in the Philippines between warring tribes of natives.) The journey to the Portuguese "spice islands," the near fleet action against mutineers and those three unbearable months across the Pacific are the stuff of legend and would test the skill and mettle of any would-be admiral of olde.

This, however, is not the scenario. Rather, players set out only to discover the famous Straits of Magellan. While encompassing the kinds of navigation and bartering skills one may have developed playing *Seven Cities of Gold*, the mission is on a much more limited scale. It's irritating when the straits are finally reached and the "end game" screen pops up, since it is just at this point that the journey seems full of history and promise of the adventure ahead. Nevertheless, the game is over, the victory points are tallied and the player is left to wonder what he is missing. Sad, one faces west, watching the sun set on a successfully completed game of *Galleons of Glory*.

TITLE:	Galleons of Glory
SYSTEM:	IBM
PRICE:	$44.95
DESIGNERS:	Gene Portwood, Lauren Elliott, Denis Friedman
PUBLISHER:	Broderbund San Rafael, CA

Face to Interface

Gilbert and Sullivan could have written "An admiral's life is not a happy one." Fortunately, his ability to command in *Galleons of Glory* is almost absolute. When one wants to bark out an order, one need only seek out the proper lackey in the crew (from Captain down to Cook), set him straight and leave him to carry on. It is important to note that in the 40+ page manual, there are only three core pages which need to be only *marginally* understood in order to effectively play *Galleons of Glory*. What this means is that one can be prowling the decks and cabins like an old salt within seconds after breaking the seal on the box and booting the game.

It is this "instant assimilation" factor which makes this game a natural for younger scholars. Any child from the sixth grade on up will be able to manage the game with Nintendo-like quickness and, even if the player doesn't find himself starting to *win* from the outset, he will start to *learn* and enjoy from the time the ships set sail. The simple routines of pacing the prow and standing astride the stern to interact with the crew make for instant access to the simple, menu-driven command decision structure without learning a great deal of "Okay, so what am I trying to do now?"

Too Lively Crew

While at sea, it is very tempting to sing the "Yo Ho" song from Disney's *Pirates of the Caribbean*. This is odd, since one is not a pirate, but some of the crew are real "yo hos" so it all works out in the end. While in one's cabin (or "office" if one relates better to business games, or "HQ" if one is a wargamer) the player can access the two most important crew members and vital tools. The tools include the map (it fills in as the player discovers the randomly generated eastern coastline of South America) and the diary (where all the goods, treasure, water supply and other vital bits of information are listed). One should always keep an eye on the diary, for it is, to be precise, one's ledger of victory points.

"Fetch Me a Cabin Boy"

The two crew members who can be summoned to the cabin include the Captain (who gets the general orders for the ship) and the priest. Outside the cabin, one can stomp over to the quarter deck where the navigator proves his importance at all times and the bosun is always there ready to discipline the crew (this is, of course, the "lash" part of Churchill's statement). Also present on the quarter deck is the telescope, where one can click and see the lay of nearby land (hoping to see plenty of green for food resupplying and natives to trade with).

Other decks and rooms will put the player face to face with the rest of the crew. The gunner, the carpenter (like the navigator, a handy guy to keep the expedition moving), the cook (a real whiner) and the doctor. Two other characters also appear. Pigafetta is the admiral's loyal servant and chronicler of the journey and often shows up to instruct the player where trouble that must be attended to is brewing. Ignoring the problem leaves Pigafetta to handle it. The final crew member is almost the ship's ghost. Andres de San Martin is the ship's astrologer (no, the admiral's wife is *not* Nancy Reagan). He only appears when things look bad and always seems to offer sage advice.

All Ashore That's Going Ashore

Often, the player will want to find a safe harbor and land (to deal with food shortages, bad weather, vital repairs or a restless crew, or just to investigate the promising terrain off the starboard bow). At this point, the captain and the carpenter are right there to help manage the resupplying and repair of the ship, but it is the natives who can really make or break (literally) the expedition. Natives can range from exceedingly friendly (and *they* range from useless to very helpful) to outright hostile. Nothing puts the attrition on the crew like skirmishing with the locals.

This Is Mutiny!

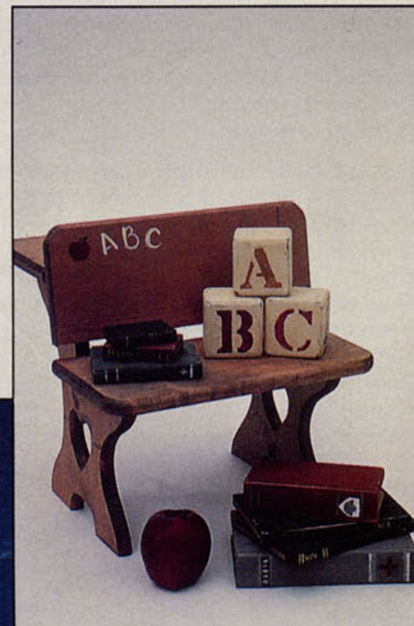
Still, there's something about shore leave that tends to make the crew mutiny.... No matter how good you are as an admiral, someone is always unhappy. The trouble is that often a player can spend more time listening for gossip than commanding his ship and *still* have to face down a mutiny (at least this is so at the most difficult play level). When a mutiny occurs, the player is confronted by a screen full of potential troublemakers, from which one must be pointed out and confronted directly. If the player has deduced (or guessed) correctly who the mutiny leader is, the mutiny is dealt with. More likely, the player will select one of the other seven "suspects" and be left stranded while the crew sails off. Of course, some players will find it easiest to avoid mutiny by increasing rum rations. (Churchill would understand!)

Broderbund has done a fine job of creating a simple game with plenty of fascinating history for players to learn quite transparently while they enjoy the game's play. To that end, it is a useful educational product on every level. For the pure gamer, however, one might wish for more (more animations, more sounds, but most of all, more *story*), because finishing a game of *Galleons of Glory* is a lot like finishing a fourth handful of delicious hot popcorn. Still hungry for such a treat, one wishes there were more in the bowl. CGW

Kaptivating Komputer Games Katch Kids' Imagination

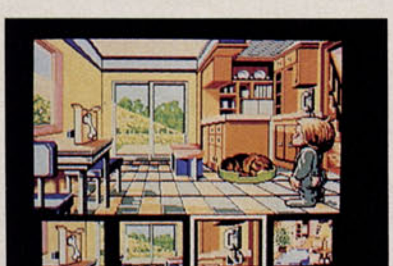
(Caitie's Educational Survey)

By Caitlin Ackelson





It's inevitable: kids will always play games. For children of *CGW*'s readers, it is probably also inevitable that kids will play *computer* games in one form or another. So *CGW* plans to present periodic updates of educational and entertainment software designed particularly for children. This survey is an attempt to supply adults with information as to which offerings provide the most value in a marketplace that is expansive, varied and rich.



McGee

The games are grouped by age: games for little kids (2-8) first, then the middle-of-the-roaders (the broad range from 5-14), then older children (9+). Listed is each game's title, manufacturer, machines on which it can be played, recommended ages, suggested retail price, a rating of from one to five stars and a brief description and evaluation. Ratings are based on educational value, fun, ease of play (which includes ease of set-up and learning how to play), imaginative scope and reviewer's unabashed personal bias.

Little Kids

McGee
Lawrence Productions, Inc.
IBM, Amiga, Apple IIGS, Macintosh
ages 2-6+
$39.95
★★★★★

A remarkably imaginative, player-driven, interactive exploration game in which the young protagonist, McGee, is led through his day via a point-and-click interface. The player chooses every step he takes: should he play upstairs or go downstairs? Should he feed the cat, wake up Mom, play on the tire swing, crawl under the rug? *McGee* provides a charming, simple, non-threatening introduction to computer literacy and interaction. Extremely engaging, non-competitive, humorous and entertaining, *McGee* can be played by even the freshest novice and requires no reading skills.



Mickey's ABCs: A Day at the Fair





Extraordinary personalities will join with you...



...against hundreds of imaginative creatures



...as you discover the wonder of *magic*



...in this world of fantasy sights & sounds !

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Mickey's ABCs: A Day at the Fair
Walt Disney Software
IBM
ages 2-5
$49.95
★★★★

Players explore home and the fair with Mickey Mouse via the keyboard in this interactive learning game. Mickey responds to every letter of the alphabet (and there is more than one possible response to each letter, for longer play life). There are special guest appearances by Pluto, Goofy, Donald, etc. Funny and imaginative, this program provides an excellent introduction not only to the ABCs, but also to the computer keyboard.

The Playroom
Broderbund
IBM, Apple, Macintosh
ages 2-7
$39.95
★★★★

Explore every corner of a well-stocked playroom in this amusing, compelling, point-and-click interactive program. Complete with dancing mice, a chalkboard that talks and a goldfish who does backflips in his bowl, this game is thorough in detail and very appealing in overall concept. Player-driven, just about every object in the room does something when selected. There are puzzles, games and toys that help teach counting, the alphabet and how to tell time. Clever and engaging.

My Grand Piano
Fisher-Price/GameTek
IBM, Commodore 64, Apple
ages 3-8
$14.95
★★★

Young players will be introduced to beginner's piano, musical notes and sheet music in this piano simulator in which computer keys double for piano keys. On-screen instructions assist players in choosing among "player piano," "teach song," "record" and "playback" functions. Players may either be prompted as to what keys to strike to play familiar tunes or make up their own songs.

Mickey's Colors and Shapes: The Dazzling Magic Show
Walt Disney Software



Mickey's Colors and Shapes

IBM, Amiga
ages 2-5
$49.95
★★

This offering for the preschool set provides attractive VGA graphics, high-quality sound (with Disney's Sound Source, which retails separately for $34.95) and of course the immense appeal of Mickey Mouse. Unfortunately, the game itself is overly simplistic and repetitive and, in places, simply makes no sense. Sadly lacking in imaginative scope in its crucial details, this program offers challenge only to very young and inexperienced players.

Katie's Farm
Lawrence Productions, Inc.
IBM, Amiga, Apple IIGS, Macintosh
ages 2-6+
$39.95
★★★★★

McGee goes to visit his cousin Katie for a day on the farm in this point-and-click interaction. This package provides player-driven exploration of a whole new environment for the McGee character. Katie and McGee can gather eggs in the chicken coop, feed carrots to the horses, play in the garden, pick raspberries, and more. Like in *McGee*, the game provides an introduction to computer interfacing and demonstrates the cause and effect of the player's choices. There are no words, so even very young children can run the software all by themselves.

Fun Flyer
Fisher-Price
IBM
ages 3-8
$14.95
★

Players fly a cartoon plane and "catch" stars, balloons, snowflakes and kites, while transporting Fisher-Price "Little People" by air. Three skill levels to accommodate very inexperienced as well as more advanced players. On-screen instructions prove useful; some reading skills needed. Grinding, monotone sound and flat visuals punctuate this very limited, beginner-level game.

The Treehouse
Broderbund
IBM, Apple, Macintosh
Soon to be released: Price yet to be determined
★★★★★

Tentatively due to be released for the IBM in June 1991 and by the end of the year in other formats, this offering from Broderbund provides the player with a treehouse full of games, surprises, puzzles and things to explore. From a telescope to view stars to a chalkboard with colored chalk for drawing, from pictures



Galleons of Glory



Katie's Farm

that talk to a synthesizer that simulates orchestral instruments, it's all just a point-and-click away. Players may choose a male or female on-screen character to explore this rich, full environment. Excellent sound effects.

Middle-of-the-Roaders

Super Solvers' Treasure Mountain
The Learning Company
IBM
ages 5-9
$49.95
★★★★

An easy-to-play, visually appealing, nonviolent arcade-style game for beginners. The player explores the beautiful, magical setting of Treasure Mountain and enlists the help of elves to find clues to the treasure. Clues consist of beginner-level number and letter puzzles, so some reading ability (or the participation of a parent) is a must. Plenty of time is allowed players who might be frustrated at more advanced, fast-paced games. New player hints help kids learn how to play.

Once Upon a Time...
Compu-Teach
IBM, Apple, Macintosh
ages 6-12
$39.95
★★★★★

Now kids can write and illustrate their own books. For illustrations, a variety of objects (under the headings Farm, Safari and Main Street) are available for use in pictures. Size, color and placement can be selected or changed via point-and-click. The finished product appears as a picture on each page with up to four lines of text beneath it. This exceptional software package allows future writers, illustrators and editorial assistants to get an early start on a career in the exciting world of publishing.

Designasaurus II
Britannica Software
IBM
ages 7-14
$39.95
★★

Players travel through time and create a dinosaur in this scientific/prehistoric adventure. Perhaps best suited for more experienced players (with parents handy to help them out at first), this package allows kids to "play scientist" and make their own creation in the computer laboratory, then see if their dinosaur can survive in the primeval world. Featuring elaborate graphics, this adventure also has a combat element that may appeal to fans of arcade games.

Super Spellicopter
Britannica Software
IBM
ages 7-14
$34.95
★★

This spelling/combat game combines arcade-style action with a spelling component. The player flies the Super Spellicopter and selects letters that appear in the sky to form words. Within the three skill levels available, players can also shoot down enemy aircraft and use strategy skills in this attempt to make spelling fun. Spelling words can be custom-selected, for the added benefit of personalized relevance.

Older Children

Super Solvers' Challenge of the Ancient Empires
The Learning Company
IBM
ages 10+
$49.95
★★★

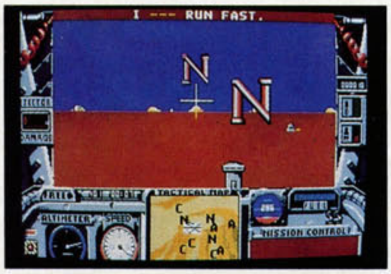
In the spirit of Nintendo, this game will keep players on the edge of their seats with the increased benefit of learning logic and problem-solving skills. Players encounter visual logic problems in mazes that contain lost treasures of the ancient world as well as a variety of quasi-menacing creatures (watch out for the killer ladybug). Intricate, colorful VGA graphics and a jazzy soundtrack provide an upbeat mood for this challenging game. The clear, useful documentation is age-appropriate.



Designasaurus II

Adventures in Learning: The Cell Explorers
Abracadata
Apple II
ages 11-15
Adventures in Learning program $69.95
Cell Explorers learning module $29.95
★★★

For use in conjunction with classroom material, this learning module takes the player on a journey through the human body with puzzles that quiz the student on biology information at the junior high school level. A fun addition to any biology lab (no formaldehyde!) that can be played individually or in teams.



Super Spellicopter

Galleons of Glory: The Secret Voyage of Magellan
Broderbund
IBM
ages 10 to adult
$44.95
★★★★

In this historical expedition game that kids and their parents will find educational,, the player steps into Magellan's boots and leads the crew of this famous voyage. Course changes, gunnery practice, ship repairs and more are delegated to the crew via a simple mouse interface and each decision impacts the success of the expedition. The player must contend with the same kinds of situations and crises that Magellan faced. Based on historical facts and easy to play.

Dr. Know-It-All's Inner Body Works
Tom Snyder Productions
IBM, Apple IIGS, Macintosh
ages 9-18
School price $119.95
(30 day free trial available for educators)
★★★

This exploration of the human body's structure and function can be used by one player, a large group or two teams. Played as a tour or as a game, the skeletal, muscular, circulatory, respiratory, digestive, nervous, reproductive, endocrine and lymph systems of either a male or female are the subject of this complete package for either junior- (grades 4-6) or senior- (grades 7-12) level biology study. Student maps and indexes as well as a complete teacher's guide are included.

Grading Curve

The quantity and variety of high-quality educational software programs available for children of any age is genuinely impressive. Truly, if one is old enough to crawl to the keyboard, one can begin an expedition in learning, adventure, creativity and entertainment whose boundaries extend infinitely into the future.

If there are educational games or software packages you would like to see reviewed in future issues, please drop *CGW* a note at P.O. Box 730, Yorba Linda, CA 92686 or call collect (714) 283-3000. We appreciate your suggestions. **CGW**

Circle Reader Service #25

Circle Reader Service #31

TITLE:	Road and Car #1 Play Disk
SYSTEM:	IBM
REQUIRES:	640K & Test Drive III: The Passion
#PLAYERS:	3 (one at a time, same computer)
PRICE:	$24.95
DESIGNER:	Tom Loughry
PRODUCER:	Sam Nelson
PUBLISHER:	Accolade San Jose, CA 95128



Another Day at the Races

Accolade's Road & Car I

by Wayne N. Kawamoto

What could be more pleasant than a scenic drive through a New England countryside bathed in rich autumn colors... at 182 miles per hour?

Accolade's new *Road and Car #1 Play Disk* supplements *Test Drive III: The Passion* to give the avid car simulation fan the horsepower of the Acura NSX and Dodge Stealth R/T Turbo in a computer re-creation of rustic New England terrain. The trip is a free-wheeling madcap dash from Cape Cod to Niagara Falls and in *this* race there is no time for clam chowder.

Out of the Showroom...

As with *Test Drive II: The Duel*, Accolade is marketing extra cars and scenery to enhance the race experience. The add-on faithfully generates stunning interiors of two new vehicles. The first, the Acura NSX, is noted as the world's first aluminum production sports car. The Dodge Stealth R/T Turbo is a sleek muscle car that, unlike its name (which implies something that goes unnoticed), will do nothing but command attention.

...And onto the Road

The add-on also recreates New England scenery in attractive and surprisingly detailed graphics, much like the original *Test Drive III*'s Northern California landscape. Although the images hardly represent photographic realism, the artists at Accolade did an excellent job of interpreting New England into colorful polygon-filled graphics. New to the *Test Drive III* environment are covered bridges, low-flying airplanes, steeple-mounted New England style churches, hot air balloons, horses and road-hogging buses that appear to carry hordes of gawking tourists.

Driving Deja Vu

For those who play *Test Drive III* with sound boards, there are new radio stations featuring drive-time music inspired by classical and pop styles, but what does the *Road and Car* add-on ultimately offer the *Test Drive* player? It does give variety to *Test Drive III*, but little depth. The graphics, although well done, are quite similar to the original landscape. In fact, one can almost mentally interchange the autumn colors with green and see something quite similar to the original *Test Drive III* scenery. Also, the action, though exhilarating, is identical to that of the original.

Fortunately, the game allows the player to combine vehicles and landscapes from both the original game and the add-on for variety and players will *still* have fun looking for the elusive short cuts in a route. Those who have tired of racing *Test Drive III*, however, will probably not find enough in the add-on to reinvigorate their gameplay.

Adding on Value?

In some ways, extra scenery may not be all that appropriate for race games when compared to flight simulators. Since a player in a flight simulator actually explores an area looking for landmarks and airports, the extra scenery enhances the game. In race games, however, the goal is not to explore, but to sprint to the destination as fast as possible. With the focus on the action, a change in scenery, unless it is drastically different, can whiz by virtually unnoticed.

Taking the Wheel

The add-on disk has its own copy protection code wheel that is used in addition to the one that comes with *Test Drive III*. This means there are times when the player must consult the code wheel(s) more than once in a session. Since the code wheel is somewhat ambiguous, this is a nuisance.

Test Drive III: The Passion is one exhilarating and fun game. Overall, the *Road and Car #1 Play Disk* provides more of the same, with a slightly different angle. Just don't expect a whole new day at the races. **CGW**

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Reader Input Device #83

On the R.I.D. card provided towards the front of the magazine, please rate the following games (only if you have played them!) and articles (if you have read them) by using a letter grade scale (i.e. A to F). Just rate the games as if you were an educator. As with the world of education, the scale will translate to:

A = Excellent
B = Above Average
C = Average
D = Below Average
F = Failure

If you wish, you may assign pluses (+) or minuses (-) to your letter grade (i.e. B+, B-, C+, C-, etc.). As always, rate only those games that you have played.

Demographics
(List the appropriate number)

1. What is your age (in years)?

2. What machine(s) do you play games on?

(List all numbers that apply. List the machine you use most often first, the others in descending order of use).

1 = IBM, clones, Tandy
2 = Amiga
3 = Apple 8 bit
4 = Apple IIgs
5 = Atari ST
6 = Atari 8 bit
7 = C-64/128
8 = Macintosh
9 = Other (specify)

3. How much time do you typically spend playing computer games each week?

1 = Less than 2 hours
2 = 2-5 hours
3 = 6-10 hours
4 = 11-20 hours
5 = 21-30 hours
6 = 31+ hours

4. How much money (in U.S. dollars) did you spend in the last 30 days on computer games?

Games

5. Warlords (SSG)
6. Silent Service II (MicroProse)
7. Universal Military Simulator II (MicroPlay)
8. Eye of the Beholder (SSI)
9. Moonbase (Wesson International)
10. Wings (Cinemaware)
11. Overlord (Virgin)
12. Galleons of Glory (Broderbund)
13. Test Drive III (Accolade)
14. Bill Elliott's NASCAR Challenge (Konami)
15. Covert Action (MicroProse)
16. Space Quest IV (Sierra)
17. Red Baron (Dynamix)
18. Street Rod 2 (California Dreams)
19. Railroad Tycoon (MicroProse)
20. MechWarrior (Activision)
21. Wizardry: Bane of the Cosmic Forge (Sir Tech)
22. Lemmings (Psygnosis)
23. M-1 Tank Platoon (MicroProse)
24. Cybergenic Ranger (Symtus)
25. Powermonger (Electronic Arts)
26. Flight Simulator 4.0 (Microsoft)
27. Blue Max (Three-Sixty)
28. Robocop 2 (Data East)
29. Populous (Electronic Arts)
30. Their Finest Hour (Lucasfilm)
31. Knights of the Sky (MicroProse)
32. SimCity (Maxis)
33. Secret of the Silver Blades (SSI)
34. Harpoon (Three-Sixty)
35. Sorcerers get all the Girls (Legend)
36. Wasteland (Electronic Arts)
37. Starflight II (Electronic Arts)
38. Wing Commander (Origin)

Articles

39. B.A.T. Review
40. Timequest Preview
41. Eye of the Beholder Review
42. Flight Sim 4.0 Review
43. Falcon 3.0 Preview
44. Lundy's Lane Scenario
45. WWI Air War Survey
46. F-16 Tips
47. Scorpion's Mail
48. Computer Game Developer Conference Report
49. Scorpion's View (Eye of Beholder)
50. Reviewer's Harddrive Opinion
51. Lemmings Review
52. Moonbase Review
53. Overlord Review
54. Knights of the Sky Tips
55. Galleons of Glory Review
56. Educational Games Survey
57. Thrustmaster Review
58. Road & Car Review
59. Software Publisher's Association Report
60. This issue *overall*

« Circle Reader Service #19

Taking a Peek

(Continued from page 6)

foray onto the diamond is still an impressive statistics-oriented program. Choices include 26 classic teams, a variety of stadiums and the designated hitter option. Plenty of player options for offense and defense, plus a great statistics compiler *made* for league play. A must for computer baseball nuts. IBM ($39.95). Circle Reader Service #7.

Nine Dragons Software
351 Ulloa Street
San Francisco, CA 94127
(415) 664-3474

HONG KONG MAHJONG: Forget *Shanghai* — this is a *real* Mahjong game of competitive placement and point grabbing. Players play the ancient game in an attempt to make a chow, pong or kong in the suits of balls, characters, winds, dragons and flowers. For those with no background in Mahjong, the game plays akin to Crazy Eights with oriental characters and "Old Maid" cards. Complete, concise instructions accent the various levels of graphics provided with the game. IBM. Circle Reader Service #8.

ReadySoft, Incorporated
20 Wertheim Court #2
Richmond Hill, Ontario L4B 1B9

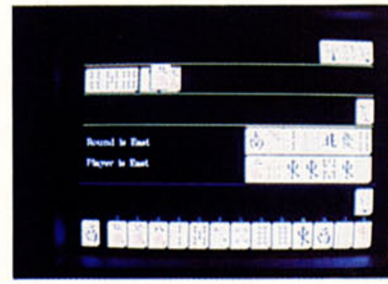
DRAGON'S LAIR II: Relive the exciting coin-op laser disc days of yore in this quality sequel to the original *Dragon's Lair* from Sullivan Bluth. This time, the evil wizard is not the only bad guy, either. (Beware the Mother-in-Law!) Dutiful Dirk Daring diligently does desperate deeds, facing doom, death and disease, to dispatch dirty denizens delving in dungeons defending delectable Daphne. Add a time machine, the return of Mordroc and 46 animated scenes full of state-of-the-art sound and graphics, and you'll be dodging snakes again, just like in the "old" days. IBM. Circle Reader Service #9.

Spacewar Simulations Company
1309 5th Avenue
San Rafael, CA 94901

STAR-KING: Another small company's first effort (like *Hong Kong Mahjong*), *Star King* offers players a strategic level space game for 1-7 players (at the same computer). Each player begins on a single planet, expands and tries to conquer the entire playing area. Many levels of play abound in this straightforward space opera game. Again, the level of graphics is below state-of-the-art, and there is no sound support, but those who can handle 3-D gameboards will want to



MicroLeague Baseball



Hong Kong Mahjong



Dragon's Lair II



Death Knights of Krynn



Cybergenic Ranger



Star-King

explore the space provided in this game. IBM ($39.95). Circle Reader Service #10.

Strategic Simulations, Inc.
Sunnyvale, CA

DEATH KNIGHTS OF KRYNN: The AD&D "Gold Box" line continues to expand with this game, which takes place a year after *Champions of Krynn* left off. The Ultimate Bad Guy (or "Undead" Bad Guy, in this case) Sir Karl spoils the victory celebration from *Champions* just to swoop down on a Death Dragon and steal the Dragonlance. The quest is on, but this time one's characters can *keep* their goodies from the previous game. For eighth through fourteenth level characters, with plenty of new monsters and spells, this one is right on the money for you SSI/AD&D RPG fans. IBM ($49.95). Circle Reader Service #11.

Symtus, Ltd
P.O. Box 912
Placios, TX 77465

CYBERGENIC RANGER — THE SECRET OF THE SEVENTH PLANET: Arcade action on the grandest possible scale, this is no "quickie finish" sequence. The player is the first cybergenically enhanced man (does the figure six million dollars mean anything to you?) who must make great discoveries and boldly venture through space and several different planetscapes (through a combination of 3-D space flight sim and a bit of role-playing). There is lots of information for players to acquire as they struggle to reach the end of this long and winding quest (players might need to purchase a new joystick after wearing theirs out playing this game). IBM ($49.95). Circle Reader Service #12.

Ultra Games
Buffalo Grove, IL

METAL GEAR: From Nintendo to the IBM in one explosive step. This is everything you would expect from an arcade shoot 'em up... five playing levels, lots of weapons, scrolling maps full of bad guys to disembowel and plenty of "bang" for the buck. A fairly straight conversion from the NES version, *Metal Gear* sends the player off to certain death in an attempt to kill "CaTaffy" (you figure out *that* pun). IBM ($19.95), C-64 ($14.95). Circle Reader Service #13. **CGW**

Over There

...Of Cabbages and Kings, Palaces and Lords

by Paul Rigby



Crystals of Arborea



Demoniak

Crystals of Arborea (new from the French company **Silmarils** and distributed by **Palace Software** in the UK) is a CRPG which tells the tale of Morgoth, Lord of Chaos. As the "ultimate bad guy," Morgoth worships nothing but destruction and has infected the world with evil. In sorrow and anger, the gods rather overreact and, in a less than divine fit of pique, drown all except the land of Arborea. Apparently, Arborea has been spared because it is the original home of the four sacred crystals of harmony, stolen by Morgoth and his servants. So, in a race against chaos, Prince Jarel and a band of trusted companions must find the crystals and restore them to their sacred shrines. To fail, of course, is to lose *everything* (we are, after all, talking about a CRPG here). This game would best be described as a mixture of strategy and role-playing with about 16,000 locations and a 3-D perspective. With a promise of "brain-teasing" puzzles, independently controlled characters, strategic fight sequences and the option to both choose and customize the player-team, *Crystals of Arborea* should be a popular new product for all gamers who own Amigas and Atari STs (£24.99).

From **Palace**'s own programmers comes a new text/graphic adventure system called "Pure Fiction." The first game expected to use this system is *Demoniak*. *Demoniak* (the game is named after the "ultimate bad guy") has torn a hole in the fabric of the universe. Through it pour his evil hoards, bent on conquest and gratuitous violence.

Fortunately, civilization has a hope. The inventor of the protoplasmic space drive and probably the cleverest man in the universe, Doc Cortex (Doctor Who?), has a cunning plan. Cortex has gathered around him a bevy of Superheroes: Johnny Sirius, the famous human-alien hybrid (and superstar?); Madlock, wizard and serial-killer; Sondra, the feminist psychic (able to detect a sexist thought within a parsec?); and Flame, the human torch. Together, the team boards Proteus, the living spaceship, and finds itself bound for the ice planet of Freezyassov. In the frozen wastes of the planet, the team tries to locate the first component of a super bomb which Doc Cortex hopes will seal Demoniak's fate. *Demoniak* attempts to be a combination of text adventure and "simulated reality." Featuring more than 50 independent, artificially intelligent characters, the player has the opportunity to become any one of them, while the other characters continue their lives offscreen. *Demoniak* was written by Alan Grant, a comic writer responsible for titles such as *Batman*, *Judge Dredd*, *Strontium Dog* and *Robocop*. *Demoniak* should be available now for Amiga/ST for £29.99 with the IBM version to follow.

In a different vein, *Feudal Lords* is a relatively simple medieval strategy game for one to four players. It is very similar to the old **CRL** game *Legend*, in which the player selects one of four feudal lords. This time, the game takes place on the map of Euthrania, which is, in turn, divided into small sections. The winner is decided when one of the lords takes possession of all of the territories. A player loses when his home territory, the one containing the player's castle, is taken by another lord.

There are many detail factors that are supposed to govern the player's strategy, for example, the economy, which includes such subjects as trade, taxation and so on. The idea, of course, is to "skin" the peasants for as much cash as possible without being kicked out of office for being a greedy royal. Further, diplomacy is encouraged. Non-aggression pacts can be made with the three neighbors for varying lengths of time or plots and assassination attempts can be sponsored against fellow lords. Out now for the Amiga at £19.99, other formats should follow soon.

The one utility that the Amiga has been crying out for is a decent adventure writing utility. There are one or two half-hearted attempts out there but nothing that makes one's heart beat faster. Enter **Heyley Software**'s attempt — *Hatrack II.*

Arriving on one disk, contained in a sturdy wallet plus a nicely printed and bound 106-page manual, this utility is very BASIC-like in use. It uses lots of IF-THENs and FOR... NEXT loops, etc. Anybody with a smattering of programming experience or anyone who has used *AMOS* will have no problems with *Hatrack II*.

Most importantly, the parser is fairly wide ranging, accepting ALL or EVERYTHING, for example, plus THEN and AND (ideal linking words that save valuable time). It also recognizes IT, THEM, HIM and HER. So, to use a manual example, "GET BAG AND PUT STONE IN IT" will work just as one would expect. One can also say "GET BREAD" and then, on the next input, type "EAT IT."

Another nice feature is the ability to link objects. For example, one can say "GIVE BALL, BAT AND MOUSE TO JIM." Containers are also supported, as well as the handy OOPS feature that takes one back a move. Brief/Verbose location descriptions can be ordered and an on-screen compass can be placed upon the screen to be activated by the mouse.

Creating an adventure is done via a number of thoughtfully designed windows, accessed via a menu and displaying all of the necessary prompts and edit options. Every edit window (messages, words, variables and puzzles) follows a similar "feel" which gives a friendly look to the utility. It is a pity that graphics are not available, but it is hoped that this will be solved with the next update. **Heyley Software**, 27 Winnington Road, Marple, Stockport, England, SK6 6PD. The price should be around £29.99.

Games written specifically for the C-64 are as rare as gold dust nowadays. However, **Big Sky Software** in Scotland has released *Time Thief*, a pure text adventure that has a real **Infocom** feel about it. It offers lots of text and lots of atmosphere, but one major difference between *Time Thief* and many adventure games is that this adventure loads into memory with only one disk access! The plot surrounds a company who deal in what they call "Timeshare Travel." Actually the theory is a fascinating tale in itself. Imagine tripping off with a bunch of friends, aged around 18, on vacation. The operation follows that an individual takes time off their years of old age (when they would assume they would be old and feeble and not able to enjoy themselves as much). In effect, they could "use" their 77th year, for example, when they are 18 or whatever! Neat, eh? So, they would die at a younger age (say, 40) but, by the wonders of Timeshare would still have "lived" their full life span (say 80 years).

Although many people used the Time Portals successfully, things began to turn sour when some people began to return crippled and maimed from their time travel. Jocasta, a top academic, travels to a place and time from which the trouble appears to originate. It appears that someone is "stealing" time and, therefore, causing mucho problems. She disappears, though, so the player must follow her to see what happened and, possibly, catch the time thief. The cost is £5.00 plus £1.00 P+P from **Big Sky Software**, 35 Old Evanton Road, Dingwall, Ross-Shire, Scotland, IV15 9RB.

Note that the above games, and any of the other games mentioned in "Over There" in past issues, can be obtained from:

Computer Adventure World, 318 Kensington, Liverpool, England, L7 0EY. Telephone: 01144-51-263-6306

Miles Better Software, 219/221 Cannock Road, Chadsmoor, Cannock, Staffordshire, England, WS11 2DD. Telephone: 01144-543-466-577/8/80. Fax: 01144-543-466-579

Premier Mail Order, Trybridge Ltd., 8 Buckwins Square, Burnt Mills, Basildon, Essex, England, SS13 1BJ. Telephone: 01144-268-590-766. Fax: 01144-268-590-076

All of the above telephone numbers assume you can dial direct. If you have any trouble, contact the international operator. **CGW**

Dogfight at the...

(Continued from page 33)

behave differently. *Red Baron* and *KOTS* both depict famous aces with their own unique combat intelligence. Max Immelman, for example, will fly against the player in a green Eindecker. However, there are two distinct ways of dealing with this threat, based on which simulator the player is flying. In *Red Baron*, there is less "ramping" of the enemies (in other words, the enemies appear and then immediately grow bigger, leaving less time for targeting). In *KOTS*, the enemy aircraft can be seen from a considerable distance (as a dot) and gradually become larger. Also, there are standard enemies who fly different aircraft depending upon their skill level. For example, in *KOTS* at the higher skill levels, if one flames three Eindeckers in a row, he can bet that a flight of Halberstadt D2s are en route for his six o'clock. (Call them "the equalizers").

Dogfighting Tips (A New Leash on Life)

The following are air combat hints picked up after countless hours with both games.

MicroProse recommends the use of the *CH Flightstick* for optimum results with *KOTS*. The keyboard driver seems the most responsive in *Red Baron*.

In *Red Baron*, one can dispatch any of the aces — even in the Expert Mode with the difficulty set at 100% — if he flies in the Sopwith Snipe. The trick is to begin a descending spiral immediately following the first pass and then bring the nose up above the horizon while continuing to maintain that position throughout the duration of a hard turn. This decreases one's turning radius and, if properly done, will find the player in the optimum firing position to bring his opponent down in a timely manner. In a mission, it's important to maintain altitude and speed. Never forget that simple rule of thumb!

KOTS is very different to fly. First, in a tight turning dogfight, one may be better off throttling back to 80 percent (with a hand close to the plus key), since the object is to turn tighter than the enemy.

Altitude is not everything. This reviewer has, on many occasions, brought the fight down to under three hundred feet and lived to tell about it. The advantage of this low-level maneuvering is that the enemy can no longer turn under the player and the fight goes from both the vertical and horizontal planes to only the horizontal plane. By throttling back to around 70 percent, one will have the fight of one's life by dodging trees and buildings while chasing his opponent. It's quite an experience.

Straight Out of the Air Museum

Red Baron holds the upper hand as far as the graphics are concerned, and how! The interface and blending of digitized images is quite impressive and the aircraft are simply fantastic 3-D polygon-filled objects. The outside views are incredible — especially when the player flies close to another aircraft. The cockpits, too, are very well done and possess an incredible array of instruments. In *KOTS*, the graphic "look" of the game is adequate. It is not as visually stunning as *Red Baron*, but works nonetheless. Those looking for "bang" for their bucks might like to know that the explosions are better in *Red Baron* (an area where, in fact, *KOTS* is really lacking). In *KOTS*, doomed aircraft perform dramatic downward spirals, but there are no fireballs like there are in *Red Baron*.

Both simulators have a replay feature, although the one in *KOTS* is quite Spartan when compared to *Red Baron*'s. The *KOTS* feature is merely an "instant replay" and clips cannot be saved to disk. In *Red Baron*, however, there is a complete editing utility. Not only can the player review a mission, but he can view it from a plethora of angles and, if he so desires, reenter into the simulation at any point during playback! The one minor drawback to this otherwise fine feature is the length of time required to fast-forward through a "video."

There is less terrain to look at in *Red Baron* than in *KOTS*. In *KOTS*, pilots performing air-to-ground missions can navigate by rivers and roads and have a clearly defined front, featuring a huge trench-line with flak batteries, combined with aerodromes which are readily perceived from the air (and the player may land at any one of them). By contrast, *Red Baron* lacks the detail of ground targets to strafe and has less distinct terrain. When one looks at one's own plane in combat, however, *Red Baron* shows the splintering of struts when damaged and blurring of one's vision into red when wounded (features not found in *KOTS*).

In *KOTS*, there is not as much variation in the weather, but the clouds are somewhat remarkable. This reviewer has never had the sensation of flying through cloud layers before in any air combat simulation. *Red Baron* also has nice cloud effects and the player may additionally adjust the wind factor, haze and the amount of daylight. The gradient horizon in *KOTS* is superb and enhances the feeling of weather along with the clouds (*Red Baron* has no gradient horizon unless one switches to an outside view). One nice feature in *Red Baron* is that the sun gives an opponent a distinct and very realistic advantage if he is flying out of it!

Red Baron includes two types of bullets: incendiaries (best for balloon-busting missions) and standard. There is a terrific animation of the machine gun's bolt action recoiling when shots are fired. One must set up his target with a deflection shot by leading his opponent considerably in order to achieve a hit. *KOTS*, on the other hand, only has one type of bullet, no firing animation and requires a bit less lead (both the noun and the verb) on the target. A nice feature about *KOTS*, however, is that one is equipped with three bombs to use as one pleases. *Red Baron* does not provide for bombs and bombing.

Red Baron does not support any kind of connection between machines (until one has access to the rumored *Sierra Network*, where multi-player dogfights between real human opponents will be a matter of course). *KOTS*, on the other hand, in addition to supporting a direct link, supports modem play. The modem dogfighting in *KOTS* is highly entertaining, due primarily to the human element involved. One can dial an opponent directly, or play head-to-head via a direct link supported by CompuServe in their new MTM (Modem-to-Modem) Lobby (type: GO MTMLOBBY). Unfortunately, one cannot fly formation with other human pilots or play varied scenarios in the head-to-head game.

Currently, *KOTS* has an upgrade entitled "Revision 2" (as previously mentioned) which, in addition to providing for friendly patrols of aircraft, allows one to sustain multiple bullet hits. This is a significant improvement over the first version where one hit is fatal. Now, when one is being shot at, a message will flash if one gets hit — to wit, the message "You've been hit — but it's not serious" will appear if a round passes harmlessly through the fabric of the aircraft. However, if one sustains damage such as aileron damage, the appropriate message will appear and one's aircraft will fly at a reduced capacity according to the damage. Additionally, one shot will no longer bring down an opponent in the head-to-head mode. This upgrade is available by writing to MicroProse and simply requesting it. They will mail you an update disk free.

For owners of *Blue Max*, the latest revision adds a new flight simulator model that is less jet-like than the original and fixes the sorting of 3-D objects. More importantly, the game now supports two joysticks in head-to-head play. This upgrade is available free upon request to registered users only. Simply contact Three-Sixty.

While *Red Baron* has no form of copy protection, in *KOTS* one must identify the various insignia of different Squadrons and Escadrilles in a pre-game history lesson.

Three-Point Landings

Wings from Cinemaware is most suited for role-playing and arcade gamers who would enjoy the cursory depth of the product as an intriguing introduction to the subject of WWI aerial combat. For the novice who is trying to learn how to fly his computer, *Blue Max* might be just the ticket. *Red Baron* is suitable for air combat simulation fans of all kinds due to its excellence in graphics and gameplay. It will serve as a standard for a long time to come. Finally, in this reviewer's opinion, *Knights of the Sky* is the most realistic and best suited for the advanced air combat simulation jocks who don't mind a few less frills in order to get more technical flight characteristics and details of WWI air combat. One thing is certain: one cannot lose when selecting a winner from this dogfight. **cgw**

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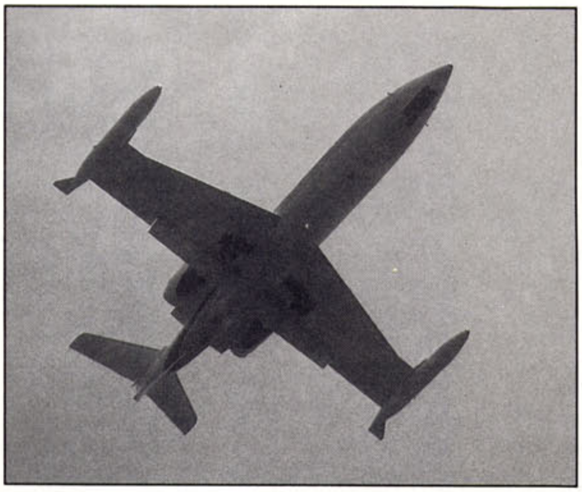
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Sphere of Flying



State of the Magazine: The recent conflict in the Persian Gulf sent sales of flight simulations "flying." Combine the renewed interest caused by the war news with some of the hot new features in flight simulators that have already reached or are just about to reach the market and one can just about sum up the hottest portion of today's computer game market.

This issue, *Computer Gaming World*'s editorial staff received clearance from the tower to present a special flight simulation issue. We've included tactical tips, previews, reviews and product comparisons. We think it is an exciting issue and perfectly fits our current demographics. According to those readers who fill in the "Reader Input Device," *CGW*'s readership has obtained, on the average, 31 years of age. He is usually male, has a "yuppie" level of income, above average education (at least a B.A.), young children and, probably, a very understanding wife. The fact that flight simulations and action games involving air combat perpetually score well when rated by our readers also lends support to the idea that this issue should be well-received.

However, whenever a disproportionate amount of coverage is provided for one genre as opposed to another, we invariably receive a considerable amount of negative mail. Therefore, we would like to encourage all of our readers to use the *positive* feedback instrument provided on page 90 to indicate their likes and dislikes with regard to computer games and this issue.

If I Only Had A Brain Department: The editor of *Computer Gaming World* profusely apologizes for the cover line on the May issue of *CGW* (#82) which stated that *Life Or Death II: The Brain* was included in the issue. A logistical problem was caused by the fact that the publisher only sent one review copy of the game and it was immediately shipped to the reviewer. This meant that, as the issue was nearing completion, the art department did not have a copy of the game in order to take a photo of the cover or to process screen shots. We had a similar logistical problem with *Cybergenic Ranger*, an advertised game, and coverage of that product was also delayed, but it was not mentioned on the cover.

May also seemed to be our issue for Murphy's Law on other fronts. "The Rumor Bag" was modemed from the San Francisco Bay area just prior to press time in order to convey the latest breaking rumors. Unfortunately, the *CGW* spelling checker felt like *Sid Meier*'s name should be changed to "Ember." We did not see it in print until the magazine was already off the press. The rumor guy was so embarrassed he painted his bag red.

CGW's expanded number of pages in six out of the last seven issues has led to a few of these irritating, but relatively minor, errors cropping up from time to time. We are trying to do better, however. We want to be more responsive to our readers and continue to improve our batting average on the typographical errors. So, until next issue, take off, you readers! **CGW**

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Computer Gaming World (ISSN 0744-6667) is published monthly by **Golden Empire Publications, Inc.,** 130 Chaparral Ct. Suite 260, Anaheim Hills, CA 92808. Second-Class Postage paid at Anaheim, CA 92803 and additional mailing offices. Permit #672-910

Postmaster: Send address changes to *Computer Gaming World*, P.O. Box 730, Yorba Linda, CA 92686-8629.
The subscription rate for twelve issues (one year) is $24.00. Canadian and foreign surface subscriptions add $11.00. Foreign air subscriptions are $74.00 per year. All payments must be in U.S. dollars, made by check drawn upon a U.S. bank, Visa, MasterCard, or money order.

Psalms 9:1-2

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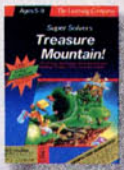
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